

Hillier Parker Property Advisers

Thwaites 3 TON ALLDRIVE DUMPER

NEWS SUMMARY

Government will face two crucial meetings to-morrow

Mitsubishi trucks may be built in U.K.

Soviet leader visits France

President Leonid Brezhnev, the Soviet Communist Party leader and newly elected Head of State, begins a three-day official visit to France to-day...

Lynch may take up Ulster task

Mr. James Callaghan will meet Mr. Jack Lynch, the Irish Premier-elect, at the European Council later this month...

Train bomb goes off in Yugoslavia

A small bomb exploded on a train in Northern Yugoslavia, killing a passenger and injuring eight...

Teacher training

New teachers should be educated to degree standard before they are allowed to practise...

Briefly ...

Homecharge was encircled with coils of barbed wire as police kept guard to stop hippies invading the monument to stage a pop festival.

Grunwick owner's 'no' to talks

GRUNWICK owner and managing director, Mr. George Ward, yesterday dashed an attempt by Employment Secretary Mr. Albert Booth to bring together at the Department both sides in the long dispute.

Common Market members urged to lay greater emphasis on research and development

COMMON MARKET members are urged to lay greater emphasis on research and development of new forms of energy in a report to be debated at the Assembly of the Western European Union in Paris on Thursday.

Jobless figures out to-morrow

Jobless figures, due to-morrow, are likely to show a sharp rise in the number of school-leavers out of work. Gross Domestic Product figures for the first quarter are due on Wednesday...

Journalists on strike at North of England Newspapers

Journalists at North of England Newspapers, Darlington, succeeded in disrupting production at the works for the first time during the fortnight-long dispute.

Electrical and Plumbing Trades Union is calling on Government to abandon legislation that would put worker-directors on the Boards of private companies

ELECTRICAL and Plumbing Trades Union is calling on the Government to abandon legislation that would put worker-directors on the Boards of private companies. Instead, it should legislate for disclosure of more company information to trade unions, EPTU says.

National Coal Board and leaders of 21,000 colliery officials have negotiated a new compromise which could ease the threat of industrial action in Britain's pits

NATIONAL COAL Board and leaders of 21,000 colliery officials have negotiated a new compromise which could ease the threat of industrial action in Britain's pits.

Doubts on the feasibility of the Government's proposed gas pipeline system for the North Sea

DOUBTS on the feasibility of the Government's proposed gas pipeline system for the North Sea have been expressed by Mr. Lawrence Waddams, BP Chemicals Marketing Services division manager.

No evidence exists that worthwhile capital investment is inhibited by shortage of funds

NO EVIDENCE exists that worthwhile capital investment is inhibited by shortage of funds, Finance for Industry, the lending and investing institution, says in its evidence to the Wilson Committee.

Chase National Bank joint venture between Chase Manhattan and the National Bank of Egypt, has made profits

CHASE NATIONAL Bank joint venture between Chase Manhattan and the National Bank of Egypt, has made profits of \$21.9m. (\$27.5m.) in the first six months of operation.

Whitehall hopes for some form of Phase Three deal

Whitehall hopes for some form of agreement or understanding on pay can be reached within the next three or four weeks. This might cover the spreading of consolidation of pay rises under the first two phases and arrangements as well as confirmation of the already agreed arrangements. It is now clear the Government does not see cash limits as a means of applying a strict public sector wage control.

Smith faces party revolt as border tension mounts

MR. IAN SMITH, the Rhodesian Prime Minister, this week faces the strongest challenge since his party came to power in 1962, amid growing border tension with the black neighbouring States and delicate new moves towards Anglo-American settlement. Rhodesian military commander was seen as a clear hint that Rhodesian forces would strike at Frelimo camps across the border if there are many more joint raids into Rhodesia.

Air agreement near with U.S.

Britain and the U.S. appeared last night to be edging towards the settlement of a new bilateral air services agreement to replace the Bermuda Treaty.

Breakdown

Regulations on airworthiness, tariffs and capacity are presently covered by a separate memorandum of understanding which expires next March. The U.S. originally was insisting that charter provisions should be written into the new bilateral treaty, to be effective from that date.



MR. CALLAGHAN—survival programme



MR. FOOT—right to carry on in power

MPs to receive stern warning

MR. JAMES CALLAGHAN will spell out the Government's "survival programme" of the next year to a special meeting of MPs at the Commons to-morrow. The Prime Minister is expected to tell his backbenchers bluntly that legislation must now be tailored to fit the requirements of the Government's pact with the Liberals.

Mr. Foot declared: "We are not prepared to run away. So long as we can command a majority in the Commons, we have the right to carry on. We are resolved to deal with the immediate situation, and prepare for the future when we can expand the great industries of this country."

LANSING BAGNALL-LANSING HENLEY

Rationalisation often benefits the companies directly involved. In the coming together of Lansing Bagnall and Lansing Henley the whole of British manufacturing and distributive industry stands to gain.



Table with columns: Features, FT SURVEY, and other market data.

For latest Share Index 'phone 01-246 8026

OVERSEAS NEWS

Begin finalises coalition, to meet Carter in July

BY L. DANIEL

MR. MENAHEM BEGIN, the leader of the right-wing Likud party and Israel's premier designate, has completed the formation of his narrow coalition. An agreement on the joint policy of the three constituent parties — the Likud (45 seats), the National Religious Party (19 seats), and the ultra-religious Aguda (4 seats), was signed this morning.

Bid to defuse south Lebanon

BY HUSAN HIJAZI

WHILE artillery duels in Southern Lebanon continue unabated, intensive moves are underway to stop the situation from getting out of hand completely. Lebanon, the Palestinians and Syria are involved in contacts while the United States is being asked to use its good offices with Israel to help in calming conditions in the border area.

Syrian missile chief assassinated

BY OUR FOREIGN STAFF

PRESIDENT HAFEZ ASSAD of Syria acted quickly yesterday to forestall any possible threat to the stability of his regime following the assassination of one of the country's senior army officers.

When a careless 30 minutes could mean a costly 12 months electricity bill, you need Ferranti Digicon.

The Ferranti Digicon Maximum Demand Monitor enables you to make the best use of the energy available in each half hour demand period, with automatic load control if needed.

Ferranti Digicon Monitors can cut the demand charge on your electricity bill by up to 20%. If your maximum demand is in the order of 100kW you should recover your investment within 12 months.

Digicon keeps a hawk eye on electricity costs. Send for more details to Ferranti Limited, Instrument Department, Moston, Manchester M10 0BE. Tel: 061-631 2071. Telex: 667857.

FERRANTI digicon keeps a hawk eye on your costs

Chile, East Germany exchange prisoners

BONN, June 19.

CHILE has freed former Communist Senator Sr. Jorge Montt from prison, and he has been handed over to East Germany in return for the release of 11 political prisoners, the Chilean Embassy announced here today.

The Embassy said Sr. Montt arrived aboard a Chilean airliner at Frankfurt Airport yesterday afternoon, where Chilean ambassador Sr. Lucia Gevert met him and handed him his passport.

Commodities brokers held in Chicago

BY STEWART FLEMING

NEW YORK, June 19. SEVEN brokers operating on the Chicago Commodities Exchange have been charged with a variety of offences ranging from attempting to defraud investors in soy bean futures to income tax violations.

The attorney, Mr. Samuel Skinner, suggested that the practices may have been going on for several years, but because traders do not come forward to say that their friends are engaging in illegal activities, the practices have not been attacked.

Fed proposal on securities

BY OUR OWN CORRESPONDENT

NEW YORK, June 19. A FEDERAL Reserve Board report has come out in favour of allowing commercial banks to expand their operations in the private placement of securities, a business dealing in billions of dollars each year.

Suarez holds talks on forming new Government

BY ROGER MATTHEWS

MADRID, June 19.

INITIAL consultations aimed at forming a new Spanish Government by the end of this week have been made by Prime Minister Adolfo Suarez following his victory in the general elections.

He is expected to start calling in the leaders of the dozen parties which form his Union of the Democratic Centre (UCD) for formal talks to-morrow, and may have a further meeting with the outgoing Cabinet in order to approve a number of administrative reforms that will allow the creation of new ministries.

The Prime Minister is said to be particularly anxious to select an effective economic team, with the names of Sr. Calvo Sotelo, ex-foreign minister, Sr. Fernandez Ordoñez, former head of the State holding company INI, and Prof. José Ramon Lasuen among the most prominent possibilities.

French Socialists fail to heal split at congress

BY ROBERT MAUTHNER

PARIS, June 19.

THE FRENCH Socialist Party, the larger partner in the Socialist-Communist alliance which is strongly tipped to win next year's general election, was today badly split both over its internal organisation and a whole range of policy issues.

Bomb blast on express train in Yugoslavia

BY PAUL LENDVAI

BELGRADE, June 19.

A SMALL bomb exploded today on an international express train in northern Yugoslavia, killing one person and injuring eight other passengers.

It exploded at 5.45 a.m. near Trhovoje in Slovenia in northern Yugoslavia, according to the official news agency, and police said it had been placed in the carriage before the Dortmund-Athens express train reached Yugoslav territory.

Although the economy is the single most critical problem facing the Premier, it is the issue of autonomous status for the Basque and Catalan provinces which has immediately surged to the forefront.

Basque congressmen and senators elected last week met today in the town of Guernica—symbol of Basque resistance to the Franco regime—to reaffirm their pledge to restore autonomous status to the region.

Opposition steps up attack on Soares

BY DIANA SMITH

LISBON, June 19.

THE Portuguese Opposition has intensified its drive to undermine Prime Minister Mario Soares' minority Socialist government.

Following this week-end's meeting of their week-formed "democratic convergence" leaders of the Social Democrat (PSD) and Christian Democrat (CDS) announced that their parties would vote against the government's proposed three-year plan (due for parliamentary debate in early July).

The government is incapable of coping with the economic crisis. So far it has not been prepared to discuss concessions with the opposition parties. Unless it does so, it cannot survive, said Professor Diogo Freitas do Amaral, President of the CDS.

Between them, the PSD and CDS have 113 seats in parliament. The Socialists have 105.

The PSD/CDS threat to vote down the three-year plan raises the burning question of Communist support in parliament for the Socialists. Their 40 votes would ensure a safe passage for the plan but, at present, their attitude towards Mr. Soares' administration is more aggressive than conciliatory.

The Left wing or nationalist Basque and Catalan congressmen will consider accepting a post in the cabinet, at least until after the municipal elections which are due to be held before the end of the year.

The row over the collection of election returns is meanwhile continuing with final results still not known four days after the voting was completed.

The main political parties, with the exception of the UCD and the Right-wing Popular Alliance, are also demanding that the State run radio and television should be brought under democratic control.

They have proposed the immediate setting up of a committee which would monitor the activities of the programme organisers.

It is not expected that any of the Left wing or nationalist Basque and Catalan congressmen will consider accepting a post in the cabinet, at least until after the municipal elections which are due to be held before the end of the year.

PNA warns on Bhutto accord

By Iqbal Mirza

KARACHI, June 19. THE LEADERS of the opposition Pakistan National Alliance warned the nation against signing a "complex" over-Alliance's "understand arrived at last Wednesday by the Government of Prime Minister Zulfikar Ali Bhutto by this was formally signed.

The two-member sub-tee, comprising Finance Minister Mr. Abdul Baseer Pirzada and PNA Secretary-General Prof. Ghulam Ishaq Khan, appointed to draft the final agreement, still deliberating on its details.

Desai to enlarge Cabinet

By K. K. Sharma

NEW DELHI, June 19. MR. MORARJI DESAI, Indian Prime Minister, expected to announce an enlargement of his present member Cabinet this week as part of a series of top appointments in the country that aim at revitalising the ruling process.

As a first step, Mr. Desai started a dialogue with opposition leaders on the eve of a unanimous choice for Indian President, who is elected on August 6.

Meanwhile, the election chief minister in the Jammu and Kashmir, where Janta Party swept to a slide victory last week, are held on Tuesday.

In West Bengal, where Marxists won an uneasy absolute majority on the controversial Mr. Jyoti will head the ministry.

COMPANY NOTICES

Multiple company notices including African and European Investment Company Limited, De Beers Consolidated Mines Limited, Anglo American Corporation South Africa Limited, and Anglo American Corporation South Africa Limited. Notices contain details of share repurchases, dividends, and company resolutions.

WAAGNER-BIRO '76: CONSTANT DEVELOPMENT. Advertisement for Wagner-Biro featuring a table of financial performance (1976 vs 1975) and a profit and loss account for 1976. The table shows turnover increasing from 4,456 to 4,666 ASm, and a profit of 985 ASm. Below the table is a balance sheet and a profit and loss account.

Boilers WAAGNER-BIRO Steel structures General engineering Industrial plant. Head Office: Margaretenstrasse 70A-1061 Vienna, Austria. Tel: 11832 wabiu. Telephone: (0 22) 57 95 45.

WORLD TRADE NEWS

U.S. may modify cargo preference proposals

BY ROY ROGERS

FURTHER MODIFICATION of America's controversial cargo preference proposals are under active consideration by the Carter administration...

More details of the proposed modifications emerged last week from Mr. Michael S. Nease, vice-president of Zapata Corporation...

Coast Guard safety standards would have to be done in American yards. By 1985, according to Mr. Nease, a total of 21m. d.w.t. would be required...

Marine underwriters warned

BY OUR SHIPPING CORRESPONDENT

A WARNING TO marine underwriters against reducing premiums for newly containerised cargo before the level of claims has fallen has come from Mr. S. E. Mann, chairman of the Institute of London Underwriters.

It was evident from the results of international investigations carried out through the International Union of Marine Insurance, that certain losses, such as breakage and denting, water damage, represent a fairly substantial proportion of the total losses from container cargo.

Japanese credit for Algeria

TOKYO, June 19. SONATRACH of Algeria has signed an agreement for a buyer's credit totalling Y99.7bn. from a Japanese banking syndicate led by the Export-Import Bank.

The Japanese bank said the loan is for Sonatrach's project to treat natural gas produced at the Algerian Hassi Mel field. The bank refused to disclose loan terms, but it is expected to be a 10-year loan carrying an interest of about 8 per cent.

Sonatrach last month signed a Y142bn. contract with two Japanese companies, C. Itoh and Co. and the Japan Gasoline Corporation, to build a gas treatment plant and a gas pipeline.

The plant will be capable of treating 21.6m. cubic metres of natural gas a year. Our Amsterdam correspondent adds: Thomassen Holland, part of RSV, the large Dutch shipbuilder and machinery group, has received an order from Sonatrach for the turn-key delivery and construction of a complete power plant in Algeria.

The order is worth around \$15.3m. and involves one electric generator, with two 25 MW turbo generators, two gas injection plants and one water injection station.

SINO-BRITISH TRADE

Now is the time... for U.K. exporters

BY COLINA MacDOUGALL

THE CBI and the Sino-British Trade Council are jointly holding a one-day conference on June 21 to tell British businessmen about the opportunities for exports to the People's Republic under the post-Mao leadership.

Now is the key moment, they believe, as the indications are that Peking is planning a new round of purchases to boost its programme for rapid industrialisation. This viewpoint is supported by Vickers' sale last week of a dynamometer worth nearly \$5m. which clinched several years of negotiations.

Topics for discussion at the conference will include a case study of the 1976 Rolls-Royce engine deal. The Rolls-Royce deal, which included technology worth \$5m. The history of other contracts will also be outlined to illuminate the experiences of smaller manufacturers.

Sir George Burton, chairman of Finance and of the CBI Overseas Committee, will be in the chair. Mrs. Margaret Thatcher, Leader of the Opposition, who had talks with Chinese leaders, including the Foreign Trade Minister, during her recent visit to Peking, will speak at the conference.

Delegates will include senior representatives of engineering, chemical, mining and instruments companies. The Charge d'Affaires, as well as the Commercial Counsellor and his staff from the Chinese Embassy in London, will attend the reception after the meeting.

the China market, trade experts believe, as the signals from Peking suggest a real interest in buying from abroad. The leadership clearly intends a rapid spurt in economic growth and the quickest way to achieve this is through buying key technology.

Peking began to make this clear as soon as Chairman Hua Kuo-feng came to power last October. At the autumn Canton Fair the opening Chinese speech resurrected a quotation from Chairman Mao to the effect that China would "resume and expand" its trade links with other countries.

Criticism of the Gang of Four, the radical group who were in command most of last year, which filled the media for months, frequently focused on the damage they did to the economy by cutting back Chinese trade.

Ever since Hua's accession to power, his leadership has emphasised the need for economic growth and dozens of major national conferences have been held in the past seven months. Important economic figures, including the Planning and Petroleum Ministers, have been rehabilitated after long spells in the political twilight.

While this is partly connected with worry about China's inability to compete with the Soviet Union in weaponry, the emphasis is very much on all-round, rather than purely military, development.

and the purchase of foreign technology was approved as a means to grow.

The party secretary of the Taching oilfield said China could not achieve rapid development unless it imported foreign technology, while the Petroleum Minister said that China would have to import "necessary" foreign oil technology.

During the meeting, the official Peking paper, the People's Daily, ran an article saying that China should learn from foreign countries in all spheres, both economic and cultural.

This marked change in policy is just beginning to show up in some new deals, of which the Vickers dynamometer is the first. Other sales of large plant are thought to be in the pipeline.

A Japanese delegation to China was pleasantly surprised in April when the Chinese Foreign Trade Minister suggested a long term exchange of oil and coal for steel and equipment. An idea that was rejected out of hand by Peking last year.

delivery dates has now declined, and the British manufacturer is now better placed to compete with his Continental counterpart. Previously the rate of inflation in this country kept manufacturers from even considering the usual fixed-price Chinese contract. Now, however, with the new ECGD schemes available it is felt that no exporter should be at a disadvantage.

The best investment from the Chinese point of view is probably the oil industry. Although Peking has had problems selling its heavy crude abroad, these are not impossible to solve, provided it can offer a steady supply. It is also speeding up exports of oil products—you will soon be able to fill up your car with Chinese petrol in Hong Kong.

Oil is the one commodity from which Peking ought to be able to earn a substantial amount of foreign exchange. Aware of this and of the vital role of energy in a growing economy, Chairman Hua has called for the development of ten more large oilfields over the next 22 years.

However, the Chinese have named all their basic industries as in need of development. Obviously they will not look abroad for anything they can easily make themselves, but they should now be interested in sophisticated equipment for transport, mining, ore processing, steel production and engineering. While they will buy cautiously with their oil credit rating with foreign banks and suppliers, they should have no problem buying what they need.

French bid to protect textiles

BY ROBERT MAUTHNER

PARIS, June 19.

FRANCE HAS DECIDED to apply import controls on a number of textiles from non-EEC countries, in an effort to protect the country's ailing textile industry, which has been hard-hit by unemployment.

M. André Rosol, the Trade Minister, announced the decision at the weekend and it would come into effect next Wednesday and would apply essentially to imports of men's shirts, women's blouses, T-shirts and cotton thread.

The decision, M. Rosol claimed, is in accordance with Article 19 of the General Agreement on Tariffs and Trade (GATT) which allows safeguard measures to be taken by member countries when a national industry is seriously threatened by a substantial increase in imports of competing products.

"It is not therefore a protectionist measure," M. Rosol said. "France has opted for free trade for the past 20 years and intends to continue on this road."

The Trade Minister added that France had invoked Article 19 of GATT only four times since 1947, notably for meat in 1975, while the U.S. had used it 17 times during the same period.

The controls, which will remain in effect until the new international multi-fibre agreement now under negotiation comes into force next year, will not be applied to imports from countries associated with the European Community, such as the members of the European Free Trade Association, the Maghreb countries, Greece,

Turkey, Spain, Portugal, Israel, Egypt, Cyprus and Malta. They are thus aimed mainly at the low-wage Far Eastern producers.

M. Rosol indicated, however, that France would have recourse to special provisions in the preferential trade agreements which link the associated countries to the EEC.

Five countries—Tunisia, Morocco, Spain, Turkey and Mauritius—will be hit by a number of other safeguard measures which France intends to take to reduce imports from them of dresses, shirts, suits, trousers and cotton fabrics.

The products which will become subject to import quotas last year took 45 to 54 per cent of the French market, M. Rosol said, thus seriously threatening national production.

Between 80,000 and 90,000 jobs had been lost in the French textile industry since 1974.

The French move is likely to embarras the EEC Commission, which was informed only at the weekend of the decision, and which thus has no more than two or three days to work out a Joint Community position. An EEC official said that the unilateral application of import quotas, apart from contravening the Community's rules, posed many problems in practice. EEC countries often imported textiles from the Far East via another member country and the certificate of origin system was still not working properly, he said.

With advantages like these no wonder TWA is the No.1 airline across the Atlantic.

- NEW YORK ON TIME
BOSTON ON TIME
CHICAGO ON TIME
LOS ANGELES ON TIME
SAN FRANCISCO ON TIME
PHILADELPHIA ON TIME

No other airline gives you the extra comfort of a Twin-Seat where, if no-one's sitting next to you, you can fold down the centre seat into a side table and really spread out. Twin-Seats are available on every 707 and in Business Zones on 747s.



No other airline works harder than TWA at being on-time. This is why they are so popular with business flyers.

Peruvian zinc project

BY OUR OWN CORRESPONDENT

LIMA, June 19.

THE PERUVIAN Government has formally approved a loan from Germany and Belgium for the construction here of a 101,000 tons per year zinc refinery.

The refinery, to be sited at Cajamarquilla, a suburb of Lima, is to be built on a turn-key contract by Sybtra, of Brussels. The German company, Lurgi, will be one of the main suppliers to the client, Minero Peru, the State mining company, which also operates a copper refinery at the south coast port of Ilo.

The total cost of the Cajamarquilla refinery is estimated at \$200m. In this first series of loans Kreditaanstalt for Wiederaufbau, the German Development Bank, is putting up

DM\$95m. for 30 years at 2 per cent. The Belgians are providing S.Frs.2.25bn. through Sybtra, for 13 years at a rate of about 7.5 per cent.

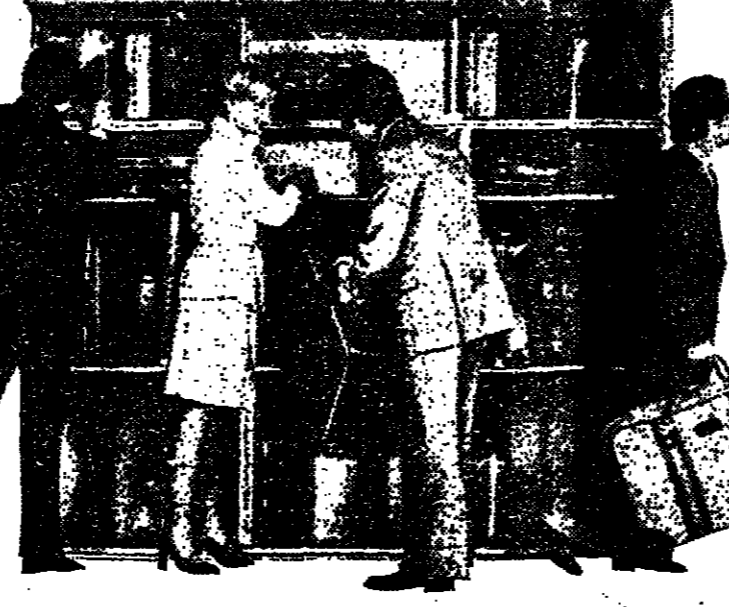
The zinc refinery project is considered controversial here. Local environmentalists claim that the plant is bound to be a serious contamination threat to Lima's air and water while economists claim that it is an expensive luxury which will not even produce many jobs. They also point out that neither KFW nor Minero Peru have disclosed why they should be offering loans at such concessionary rates for a project which is both a threat to the environment and which, in theory, was supposed to be commercially viable.

CONTRACTS

Boeing said Maersk Air be for a large hotel group installation. Honeywell has received an order worth \$11.5m. for instrumentation to monitor an oil-from-peat complex being built near Johannesburg, placed by South African Coal, Oil and Gas. Canada's largest charter line, Wardair, has ordered two Dash-7 48-passenger STOL aircraft from De Havilland Aircraft Canada, now owned by the Federal Government for \$9.5m. including spares it also has an option to buy three more after 1979.

World Economic Indicators

Table with columns: INDUSTRIAL PRODUCTION 1970=100, May 77, April 77, Mar. 77, May 76, % Change on year. Rows include S., K., G., Germany, Holland, France, Belgium, Japan.



No other airline gives you Carry-on-luggage compartments on every 707. A great idea for anyone in a hurry. On landing you simply pick up your bag and go.

- Over 700 flights a day in the USA. ALBUQUERQUE, AMARILLO, MIAMI, NEWARK, NEW YORK, OAKLAND, OKLAHOMA CITY, ONTARIO (Calif.), PHILADELPHIA, PHOENIX, PITTSBURGH, ST. LOUIS, SAN FRANCISCO, SAN JOSE, TAMPA, TUCSON, LOS ANGELES, WICHITA.



No other airline gives you an exclusive international terminal in New York or onward connections to 36 US cities.

With all these advantages no wonder TWA carries more scheduled passengers across the Atlantic than any other airline. They make it so easy! Call your travel agent.

No.1 across the Atlantic TWA

HOME NEWS

Far more jobless school leavers expected

By Peter Riddell, Economic Correspondent

A SHARP rise in the number of school leavers out of work is likely to be shown in the unemployment figures due to be published to-morrow. It is generally expected there will be a repetition of the pattern of last year, when the number of unemployed school leavers jumped from about 40,000 in May to more than 200,000 by mid-July before falling back sharply in the autumn. The Government is at present considering measures to provide school leavers with a job, a training place or some other form of special assistance. The adult unemployment figures will also be watched closely to see whether they provide any further evidence on the puzzling question of why the jobless total has not risen in recent months, contrary to most expectations and in spite of a very slow rate of growth in domestic activity. The seasonally adjusted total of adult jobless is 1.32m, last month was slightly less than last September while notified vacancies have risen by more than a fifth. A fairly depressing view of economic activity is, however, likely to emerge from the gross domestic product figures for the first quarter, especially after last week's statistics showing almost no increase in industrial production in recent months. The GDP figures, due to be announced on Wednesday, should also provide a more detailed indication of the recent trend of profits. The other main indicator, out-to-day, will show the rate of growth of average earnings for the first nine months of Phase Two to April. During the first eight months of this phase, earnings rose by 7.9 per cent. This is larger than original target for whole of Phase Two and also indicates an annual growth rate of 12 per cent. Officials are confident, however, that when Phase Two is completed the earnings increase will be in single figures.



Uncle John—semi-submersible, pipe-layer and fire-fighter.

Capital investment 'not held back' by lack of funds

By Margaret Reid

THERE IS no evidence that inflation should be controlled so that interest rates can be brought down and held stable at levels which are comparable with those ruling in other industrialised countries. "Such action would do much to encourage the resuscitation of industrial demand for capital and preserve competitiveness in export markets." Since 1973, FFI has committed £400m to British industry, including IFFC's £118m in loans and shareholdings and £282m in leasing and similar deals. Another £12m has been put up by way of shipping finance. FFI's Finance Corporation for Industry arm, revitalised and, in 1975, expanded to operate a £1bn medium-term lending facility (originally expected to be used up in two years) has so far committed only £232m, to 30 major industrial companies since 1973. The relatively limited size of this, compared with £1bn, is put down to other influences having since boosted companies' cash position, notably resumed rights issues, more medium-term bank lending, and tax reliefs. The paper explains that ICF, or its Technical Development Capital arm have invested in the past ten years have had a mixed record. "In our view it is essential that inflation should be controlled so that interest rates can be brought down and held stable at levels which are comparable with those ruling in other industrialised countries. Such action would do much to encourage the resuscitation of industrial demand for capital and preserve competitiveness in export markets. Since 1973, FFI has committed £400m to British industry, including IFFC's £118m in loans and shareholdings and £282m in leasing and similar deals. Another £12m has been put up by way of shipping finance. FFI's Finance Corporation for Industry arm, revitalised and, in 1975, expanded to operate a £1bn medium-term lending facility (originally expected to be used up in two years) has so far committed only £232m, to 30 major industrial companies since 1973. The relatively limited size of this, compared with £1bn, is put down to other influences having since boosted companies' cash position, notably resumed rights issues, more medium-term bank lending, and tax reliefs. The paper explains that ICF, or its Technical Development Capital arm have invested in the past ten years have had a mixed record.

Uncle John makes debut

By Our Aberdeen Correspondent

THE NORTH SEA extended traditional inhospitable welcome to newcomers at the week when the new semi-submersible pipe-laying and fire-fighting vessel Uncle John, fresh from a Norwegian shipyard, made its public debut before the critical eyes of the oil industry. Difficulties in getting a under tow into Peterhead by threw the day's planned exercise out of gear, while 150 gales and a handful of journalists waited in the wind and intermittent rain on the quayside, hoped for the best. None the less, the untramped Uncle John—owned by a consortium of Ellerman, Uglanda, and Houlder Brothers Offshore (which has the major holding), was on view if exactly in motion. Looking much like a seal down semi-submersible oil rig and named after Houlder's chairman, Mr. John Houlder, plus affectionate tag "Uncle," £17m vessel was built to have a variety of jobs in the climatic conditions of the North Sea. They range from welding the seabed in depths up to 1,000 feet, to fire-fighting on the face. The main working deck has 100-tonne cranes capable of lifting up to 600 feet below the face, and a 15-tonne crane deckwork as well as a big set point to an oil industry new of uncontrollable blowouts fires, two fire fighting pumps monitors with two more sets of being added, all able to sl water 200 feet to a height of feet.

There is also a saturated diving system for work in water 1,000 feet deep and provision the installation of a sea diving bell. But it is Uncle John's speed up to 12 knots, her ability to change fire-fighting in 12 and dynamic positioning by computer—staying in one spot while anchors—that Houlder Brothers is stressing to an industry wondering when the next £100m order will happen. Mr. Houlder has boasted ideas that major oil companies should pay a standby fee to Uncle John ready for action the winter, when she is usually employed in normal wire and pipe-connecting operations. If the weather were bad, he argued, only the Uncle John's speed could provide the vital aid provided she was at instant readiness.

Fire-fighting

There is also a saturated diving system for work in water 1,000 feet deep and provision the installation of a sea diving bell. But it is Uncle John's speed up to 12 knots, her ability to change fire-fighting in 12 and dynamic positioning by computer—staying in one spot while anchors—that Houlder Brothers is stressing to an industry wondering when the next £100m order will happen. Mr. Houlder has boasted ideas that major oil companies should pay a standby fee to Uncle John ready for action the winter, when she is usually employed in normal wire and pipe-connecting operations. If the weather were bad, he argued, only the Uncle John's speed could provide the vital aid provided she was at instant readiness.

Managers underpaid 'by 25%

MANAGERS believe they are being underpaid by at least 25 per cent, according to a survey by the recruiting company Selection Thomson of Glasgow. More than two-thirds of the managers interviewed holding senior posts would require a 25 per cent increase to move to a new job and more than one-third of them would consider emigrating if the terms were right.

Squeeze warning Stockbrokers, W. Greenwell and Co. says that the Bank of England must not hesitate to buy back gilt-edged stock if there is a danger of a repetition of the monetary squeeze of earlier this year.

Bias claim Conservatives are to question the Government about recent appointments to the chairmanships of area health authorities. Mr. David Ennis, the Social Services Secretary, which they feel are political.

Legacy duty A legacy duty creating a financial incentive to the spreading of bequests is suggested to-day by Professor Lord Robbins in a wide ranging pamphlet on liberty and equality, published by the Institute of Economic Affairs.

New mini-bus The OSEL Group of Great Yarmouth has developed a new one-man atmospheric mini-submarine capable of working on offshore oil and gas installations to depths of 2,000ft. The Wharton Williams diving company has ordered the first two submersibles in a contract worth over £250,000.

Price ceiling plan The Government should set a 9 per cent price rise ceiling for the coming year, the National Consumer Council says to-day, contingent on a satisfactory wages deal with the unions. This is the first time since the council was set up in 1975 that it has urged the Government to fix a price ceiling.

Pensions attack The Confederation of British Industry has again attacked Government proposals to give trades unions the sole right to appoint the member representatives of pension schemes, management bodies.

Archway inquiry Objectors to the improvement scheme for part of the Archway Road, North London are expected to try to force another adjournment when the public inquiry reopens this evening.

Petrol pledge sought The RAC has asked the Government for an assurance that motorists will be safeguarded against petrol shortages in the weeks before the 5p tax on petrol is removed.

Windscale atomic plant probe reopens to-day

By Ian Breach

THE WINDSCALE public inquiry resumes in Whitehaven this afternoon after an opening week where various opinions were presented. Mr. Raymond Kidwell, QC, for Friends of the Earth, will resume his cross-examination of Mr. C. M. Allday, managing director of British Nuclear Fuels, and the company's first witness brought in support of its application to expand and develop thermal-oxide reprocessing at the Windscale atomic plant. Shortly before the inquiry adjourned on Friday, Mr. Allday was pressed by Mr. Justice Parker, the inquiry chairman, to make available a copy of the contract between the company, the French and German partners, and 11 Japanese electric-power utilities. The contract, said to be worth £500m, is for reprocessing spent fuel from Japanese reactors and the return of separated waste. Of that sum, £150m would be advanced and used for capital works on the expansion at Windscale. The Japanese are still keen, after two years' negotiation, to have the contract signed. Today Mr. Kidwell, who has been examining a copy of the contract, will further press Mr. Allday on vital technical and financial aspects of the deal, in which Friends of the Earth claims there are significant environmental and political disadvantages. A tentative programme for the rest of the week includes submissions by and cross-examination of two of the company's other witnesses. They are Mr. A. I. Scott, the company secretary, who will describe the planning history to the application, future developments, and employment prospects; and Mr. B. F. Warner, deputy head of research and development, who will describe the company's reprocessing objectives.

Spinners' problems inquiry

FINANCIAL TIMES REPORTER

PROBLEMS in the Lancashire spinning industry are to be investigated by the Department of Industry after a request from the Lancashire Textile Employers' Association. The request was made because of fears that more redundancies might be announced in the wake of the dismissals last month of 200 employees by Shiloh, one of the main independent groups. The association hopes that the investigation will lead to the Government making further representations to the EEC Commission at Brussels for industry.

action to be taken to impose limitations on imports from a number of sources including India. The problems of the Lancashire spinners were discussed at a meeting last month between Department of Industry officials and trade union and management officials after the closure at Shiloh. One move being considered is a special working party under the Government's industrial strategy consisting of employer and employee representatives and the Department of Commission at Brussels for industry.

This would replace informal group on development within the Cotton and Allied Textile Industry, the existing forum for discussions on the industry's problems. The Association feels the more urgent action is needed and said yesterday that there were doubts whether certain sections of the industry could survive.

Car parts makers rebel

By Peter Cartwright, Midlands Staff

AMBITION smaller motor component suppliers becoming involved in the fast-developing multi-sourcing policies of European vehicle producers and retail organisations are considering setting up their own trade association. They point out that component makers last year exported £1.6bn worth of products. Any new association could be inside or outside the Society of Motor Manufacturers and Traders, the representative industry body. The society already has a strong section of 800 component makers. Yet 2,000 or more suppliers are not members. Many of them are in the replacement and spares market only and want to become officially recognised by vehicle producers at home and overseas. Their argument for an independent body is based on the belief that they would prosper faster through trade-only shows from which the public would be excluded. It has been a long-standing grievance of component makers that at motor shows in London they are pushed out of the limelight into galleries and cannot distinguish between potential buyers and the general public. They also point to the growing success of component-only shows, particularly the recent one at Geneva. They suggest that at the motor show at the National Exhibition Centre at Birmingham next year the public be restricted to the hall showing cars. This approach is categorically rejected by the society. "The Motor Show is a public show in all areas and will remain so at the National Exhibition Centre, it said.



The World's largest manufacturer of Industrial Suction Cleaners

Urgent advice to employers with pension schemes.

You probably know that there'll be a new state earnings-related pension scheme from April next year. And that your company can contract employees out of it if your occupational pension scheme meets certain conditions. But did you know that you must, by law, consult your recognised trade unions? That you have to give your employees notice of what you intend to do? That, if you choose to contract out, you must apply to the Occupational Pensions Board for a contracting-out certificate? And that, finally, if you don't get a contracting-out certificate, you and your employees could find yourselves paying more contributions than you meant to? Time is short. Consult your pensions adviser without delay.

Issued by the Department of Health and Social Security and the Occupational Pensions Board. To DHSS Leaflets Unit, Block 4, Government Buildings, Honeypt Lane, Stanmore, Middlesex HA7 1AY. Please send _____ copies of leaflet "Social Security Pensions Act 1975: Guide for employers with occupational pension schemes" (NP 23). Name _____ Address _____ Company _____

RENFÉ Red Nacional de los Ferrocarriles Españoles Madrid U.S. \$ 130,000,000 Medium Term Loan unconditionally guaranteed by the Kingdom of Spain managed by WESTDEUTSCHE LANDESBANK GIROZENTRALE BAYERISCHE LANDESBANK GIROZENTRALE KREDIETBANK S.A. LUXEMBOURGEOISE BANCO DE VIZCAYA NEDERLANDSCHE MIDDENSTANDSBANK NV DRESDNER BANK AKTIENGESELLSCHAFT SECURITY PACIFIC BANK CROCKER NATIONAL BANK BADISCHE KOMMUNALE LANDESBANK - GIROZENTRALE - THE BANK OF TOKYO (HOLLAND) NV DAI-ICHI KANGYO BANK (SCHWEIZ) AG ORION BANK LIMITED ASSOCIATED JAPANESE BANK (INTERNATIONAL) Limited BANK OF MONTREAL BANQUE CANADIENNE NATIONALE DAIWA EUROPE N.V. THE TOKAI BANK, LIMITED provided by Associated Japanese Bank (International) Limited Badische Kommunale Landesbank - Girozentrale - Banco de Vizcaya Bank of Ireland Bank of Montreal Bank of Scotland The Bank of Tokyo (Holland) NV Banque Canadienne Nationale Banque Internationale à Luxembourg S.A. Banque Nord-Europe S.A. Bayerische Landesbank International S.A. The Commercial Bank of Australia Limited Coutts and Co. Crédit Commercial de France Crocker National Bank Dai-ichi Kangyo Bank (Schweiz) AG The Daiwa Bank Limited Dajwa Europe N.V. Dow Banking Corporation Dresdner Bank Aktiengesellschaft - London Branch First National Bank of Oregon Fuji Bank (Schweiz) AG Girozentrale und Bank der Österreichischen Sparkassen Aktiengesellschaft Grundig Bank GmbH Hamburgische Landesbank - Girozentrale - Hanse Bank S.A. Hypobank International S.A. Iran Overseas Investment Bank Limited Japan International Bank Limited Kreditbank S.A. Luxembourggeoise London Interstate Bank Limited The Mitsuishi Bank, Limited Nederlandsche Middenstandsbank NV Agent WestLB International S.A.

Handwritten signature or mark in a box.

Jeppia

A diplomatic argument in favour of the Peugeot 604.



When the Elysee Palace decided some time ago to update the French Ministerial fleet, the Peugeot 604 seemed an obvious choice.

Not surprising when you consider the special requirements of the senior decision maker; requirements not so different from your own perhaps.

The car must have a style befitting the passenger's position in the world. But without announcing his presence too loudly.

It should provide comfort, tranquillity and security. And it should be as at home in town traffic as it is at high speed on a motorway. The combination of a powerful but refined 2.7 litre, V6 engine and the power assisted steering

of the 604 make for relaxed driving at all speeds.

It goes without saying that the creature comforts of such a car should be comprehensive. Electrically operated windows front and rear and an electric sun-roof are standard. As are the subtly tinted windows and beautiful metallic paint finish.

To aid relaxed discussion, there is more than ample leg and head room in the back. And for added luxury, leather upholstery and air conditioning are also available.

Finally, as with all Government decisions, a major consideration was price. The Peugeot 604 starts at around £6,500.

End of argument.

- I am interested in the Peugeot 604, please send me a brochure.
- I am interested in duty free purchase for re-export.

Name _____

Address _____

16

Send to: Peugeot Automobiles (UK) Ltd., P.O. Box 2, Liverpool L4 1UR.
Tel: 01-993 2331 (London Office).

The Peugeot 604

Prices of the superb 604 range start at £6,574, for the velour upholstery, manual transmission model. Alternative models: velour upholstery, automatic transmission £7,024; velour upholstery, automatic transmission, full air conditioning £7,557. Leather upholstery optional at: £336. All prices include car tax and VAT. Prices correct at time of going to press.

HOME NEWS

North Sea gas gathering plan criticised

BY KEVIN DONE, CHEMICALS CORRESPONDENT

DOUBTS ABOUT the feasibility of the Government's proposed gas-gathering pipeline system...

Mr. Waddams says in a paper to be presented this week at the Eurochem exhibition...

The Government has set up a joint public/private sector company to study the possibility of establishing a gas-gathering pipeline system...

Doubts It is hoping that this feedstock could form the basis of a new petro-chemicals industry...

Increased research on energy urged

By Ray Dafter, Energy Correspondent

COMMON MARKET states are urged to lay greater emphasis on research and development of new forms of energy...

The report shows that half of Britain's electricity requirements, equivalent to 15 nuclear power stations each of 1,000 megawatts, could be generated from the waves. Tidal flows and thermal sea power are considered to be other sources of energy worthy of deeper investigation...

"These sources of energy are eternal. Unlike coal, oil and gas, they can never run out," Mr. Toby Jessel, Conservative MP for Twickenham and supporter of the Western European Union's Committee on Scientific, Technological and Aerospace Questions, writes in the report.

The Government was investing £25m on research and development in wave power. It was also investigating other energy forms—a report on wind power is expected to be published by the Department of Energy this week.

Drop worker director plans, says union

BY CHRISTIAN TYLER, LABOUR CORRESPONDENT

THE ELECTRICAL and Plumbing Trades Union is calling on the Government to abandon legislation that would put worker directors onto the Boards of private companies...

The union says collective bargaining can be extended "virtually without limit" until industrial democracy is achieved. These points are made in a resolution put down by the union for the annual conference of the Confederation of Shipbuilding and Engineering Unions in Scarborough this week.

The union has consistently attacked the idea of worker directors as suggested in the Bullock Report. Its resolution could bring to a head some of the grave TUC doubts now emerging about the White Paper promised for next month.

Journalists' action disrupts newspaper

BY OUR LABOUR STAFF

JOURNALISTS on strike at North of England Newspapers in Darlington succeeded in disrupting production at the weekend and for the first time in the fortnight-long dispute.

A picket by members of the National Union of Journalists prevented distribution of most copies of the Northern Echo on Saturday morning. Journalists on strike were joined on the picket lines by members from other parts of the country.

Police were called after incidents which occurred as pickets tried to prevent papers being loaded on to vans. Only about 20,000 copies of the Northern Echo reached newsagents, the strikers said, compared with a normal print run of up to 117,000.

The strikers claimed that van drivers, members of the National Society of Operative Printers, Graphical and Media Personnel, had refused to work for the union official after members of management had handled papers.

Compromise at pits may end deadlock

By Our Own Correspondent

A NEW COMPROMISE negotiated between the National Coal Board and leaders of 21,000 colliery officials could ease the threat of industrial action in Britain's pits.

Members of the National Association of Colliery Overmen, Deputies and Shifters voted by an overwhelming majority to implement industrial action unless they could obtain satisfactory early retirement terms.

After several months of bargaining, a new Coal Board offer has been put forward which union leaders are now expected to recommend to their members.

Delegates at the union's annual conference in Douglas, Isle of Man, will be given details of the new offer later this week. They will be asked to endorse the decision of their National Executive Committee that the deal should be put out to a pithead ballot.

There has already been sporadic industrial action in some Yorkshire pits because of the delay in settling the early retirement claim. Details of the new offer have not yet been given but it is thought to be similar to that accepted by the 260,000-member National Union of Mine-workers. It also takes into account the special problems of under-officials who have had a longstanding superannuation scheme.

Peace hopes in Plessey women's strike

By Our Liverpool Correspondent

A POSSIBLE breakthrough has emerged in the sit-in by 200 women electronic workers at the Plessey Telecommunications plant at Kirkby, Liverpool.

The women have been on strike for five weeks over the company's rationalisation plan, which seeks 1,400 redundancies from the four Merseyside factories and has meant the closure of plants at Kirkby and Speke.

Mrs. Lily Allen, the senior shop steward of the electrical workers' union, said she was pleased that the women had agreed to interview each woman to offer redeployment with equal opportunity at either of the other two factories.

"If the women agree, the management will send a mini bus to ferry them in parties down to the headquarters for the interview showing anything out of the way," Mrs. Allen said.

Glenfield action plea to Ministers

THE SCOTTISH Minister of State will be asked to-morrow to intervene in the planned closure of the Glenfield hydraulic engineering plant in Kilmarnock.

More than 1,000 jobs are threatened following the announcement last week by Crane (U.K.) that no money is available to meet increasing losses at the plant.

Yesterday, the local MP Mr. William Ross discussed the crisis with representatives of the local Scottish Office particularly Mr. Gregor McKenzie, Minister of State with responsibility for industry.

Glenfield shop stewards also met yesterday. They are not in agreement on the plea for the factory to stay open.

This week in Parliament

TODAY

Commons - Debate on housing in England and Wales. Remaining stages of the New Towns Bill. Motion on the Double Taxation Relief (Tax on Income) (U.S.A.) Order. Lords - Sale of Manors Bill (report). Construction of Roads (Time Limit) Bill (report). Rent Charges Bill (Second Reading). Motion to approve Pneumonia, Bystenosis and Miscellaneous Diseases Benefit (Amendment) No. 3 Scheme 1977, and Mis-use of Drugs Act 1971 (Motion). Order of the House of Commons. Contract Terms Bill (committee).

Board Witness: Inland Waterways Amenity Advisory Council (4 p.m., room 8).

Standing Committees. A-Rousing (Homeless Persons) Bill (10.30 a.m. and 4 p.m., room 12). B-Local Authorities (Restoration of Work Powers) Bill (10.30 a.m. and 4 p.m., room 9). C-Merchant Shipping (Safety Convention) Bill (10.30 a.m., room 10). G-Post Office Bill (10.30 a.m. room 11). D-Finance Bill (4 p.m., room 10). E-Criminal Law (Lords) (4.30 p.m., room 11). WEDNESDAY. Commons - Finance Commission Bill, completion of remaining stages. Proceedings on Restrictive Trade Practices Bill. Lords - Debate on the needs and treatment of disruptive children and young persons and a coordinated policy on the part of all those responsible for their wellbeing.

THURSDAY

Commons - Debate on Fisheries policy, including relevant EEC documents. Motion on EEC Documents on Monetary Compensation Amounts. Lords - Import of Live Fish (Scotland) Bill (Third Reading). National Land Fund Bill (Second Reading). Education (Northern Ireland) Bill (Second Reading). Deer Bill (report). Debate on reductions in the reserve forces and stockpiles of key stores. Select Committee - Race Relations and Immigration Subject: Government assumptions about potential immigration. Witnesses: Runnymede Trust and Joint Council for the Welfare of Immigrants (4 p.m., room 15).

WEEK'S FINANCIAL DIARY

The following is a record of the principal business and financial engagements during the week. The Board meetings are mainly for the purpose of considering dividends and official indications are not available whether dividends concerned are interims or finals. The sub-divisions below are based mainly on last year's timetable.

Table with columns for Date, Title, and Details. Includes sections for Today, Tomorrow, and Friday. Lists various company meetings and events.

Businessman's Diary

U.K. TRADE FAIRS AND EXHIBITIONS

Table with columns for Date, Title, and Details. Lists trade fairs and exhibitions such as British Genius Exhibition, Int. Chemical Engineering Exhibition, etc.

OVERSEAS TRADE FAIRS AND EXHIBITIONS

Table with columns for Date, Title, and Details. Lists overseas trade fairs and exhibitions such as Hydraulic and Compressed Air Exbn., Environmental Protection Exhibition, etc.

BUSINESS AND MANAGEMENT CONFERENCES

Table with columns for Date, Title, and Details. Lists business and management conferences such as Confederation of British Industry: Business Opportunities in China, P.E. Consulting Group: Solving Problems by Simulation, etc.

Entertainment Guide

CC-These theatres accept certain credit cards by telephone at the box office

Table with columns for Venue, Title, and Details. Lists various theatres, operas, and entertainment events such as The Royal Shakespeare Company, The Phoenix Theatre, etc.

Large vertical advertisement on the right side of the page, featuring text like 'new centre' and 'that you...'.

John H. ...

The Executive's and Office World

EDITED BY CHRISTOPHER LORENZ

EMPLOYEE MOTIVATION

BY ARTHUR SANDLES

Trying harder in Monte Carlo

HANDLING STAFF morale when a company is embroiled in a takeover war, and is the object of purchase, is not the easiest of management problems. No-one is particularly sure of their future, and this is most true perhaps of the very senior executives to whom the rest of the organisation is looking. Think then of the impact on companies which are not simply being sold, but which are up for auction. The situation is peculiar enough in itself, but potentially ruinous to the business in the short term at least.

Twice in recent years there have been corporate auctions in the world of travel. In Britain the Government off-loaded Thomas Cook onto the Midland Bank after a public scramble. At the time the effect on middle range executives was depressingly obvious. This was hardly surprising. Much of the bidding came from groups which made a strong point of saying that Cooks was a disaster and could be improved rapidly via dramatic change. Now we see the scene re-played with Avis, the car rental operation which until recently was an off-shoot of I.T.I.

The differences are, however, striking. Avis is apparently an appealing, purchase not only because of its potential, but also thanks to its performance. The bidders are attracted by the patent competence of the present operation rather than what they see could be done with the enterprise.

Divest

Nonetheless, Avis is now up for grabs. The I.T.I. group was ordered to divest itself of the car rental company thanks to American anti-trust legislation. Problems arose over the sheer difficulties in selling an international operation of Avis's size in one fell swoop. American Express interest petered out, reportedly because the same anti-trust rules would have been invoked. In the end a public trustee was appointed by a court and Avis shares have been offered in a series of auctions. Until last week the rules were that the shares could only go to small investors. Now, however, an offer by conglomerate Norton Simon appears to have upset these plans. Norton Simon has the edge on rival offerings from Fugua Industries and Britain's Seas Holdings and have now received court approval. All this wrangling has really

upset the Avis appellation, and yet the company has somehow managed to keep a straight public face. Few Avis renters can realise the turmoil that is going on behind that "we try harder" button.

Even without this piquant background car rental deserves some attention. There are one or two aspects of the business which make it intriguingly different. Predominant in this is the impressively high financial responsibility of relatively lowly paid employees. For a £40 deposit and £10 a day a customer can drive off with assets worth £2,000. Area managers can have control over substantial fleets and a measure of say over the size of those fleets and the model mix. It may sound like a cliché but when Colin Marshall, the Englishman who heads Avis, says that "our cars are only our stock in hand, our assets are the people who work for us," he means it. Avis, therefore, like Hertz and Godfrey Davis, pays considerable attention to staff and middle management motivation.

This was seen most spectacularly of late at the Avis management conference in Monte Carlo. Every three years the company assembles its area management from the non-North American locations in a central point for a few days of tub-thumping and training. This time some 400 employees were involved, with nearly as many accompanying spouses. The cost to Avis was not far short of £200,000, and various car makers picked up sizeable additional bills for lunches, dinners and beach barbecues.

To any outsider the event was remarkable. To a British outsider it was not far short of incredible. To get 400 senior employees all to wear red coats and to be clearly dedicated to the corporate credo says something about management motivation.

Confidence

Tracing the source of this motivation is more difficult. Basically the Monte Carlo mood appeared to be one of such confidence that whoever acquired Avis would in fact find themselves possessed by the thing they thought themselves to own.

The 400 employees were subjected to a dawn-to-dusk training programme for three days which proved to be an impres-



Middle managers at Avis have a high level of responsibility

Links that put industry in touch with schools

BY SUE CAMERON

INDUSTRIALISTS and educationists seem to agree that one of the best ways of narrowing the present communications gap between them is to establish local link schemes between schools and manufacturing plants.

The advantage of such a set up is that it gives teachers and managers the chance to learn about each other's viewpoints and problems at first hand and to give each other practical help and advice. As a result pupils can gain a far better idea of what a career in industry is really likely to offer them. This in turn helps manufacturing companies with their recruitment.

Within the chemical industry the idea of link schemes was pioneered by the agricultural division of ICI which started liaising with schools in the North-East in 1967. A year later the idea was taken up at a conference of science teachers, academics and industrialists and to-day hundreds of link schemes are being run all over the country under the aegis of the Chemical Industries Association.

British Petroleum, ICI, Pilkington Brothers, Leporte and Glaxo are among the companies operating link schemes, although all the projects are based on local plants. For instance, at the BP research centre in Sunbury-on-Thames there is a link scheme involving 12 secondary schools within the area.

Under the BP scheme local pupils go to visit the research centre and staff from the company also go into the schools to talk to pupils and teachers. BP provides some equipment and materials for the schools' laboratories—particularly valuable now that education budgets are being cut—and it also gives teachers access to the research centre's technical library.

A work experience project has been introduced for school leavers under the link scheme. Pupils go to the Sunbury site for two weeks and work in one of the departments there. They might be put into the drawing office, the laboratory, the accounts section or even the staff restaurant. The work experience programme covers pupils of all abilities and BP works with the local teachers to allocate suitable jobs to individual young people.

Mr. John Ashford, the link secretary for the Sunbury research centre, stresses that the scheme is meant to promote the entire chemical industry in the schools—it is not part of an in-house BP recruitment drive. He adds that the aim is to give children some understanding of the way the industry works.

Encourage

Ransome Joffmann Pollard, a major U.K. bearings company, runs school-industry schemes similar to those of BP at all of its nine British plants. The aim is to encourage young people to go into the bearings industry, to show them what the industry is like and what sort of career opportunities it has to offer.

Here again managers from RHP visit local schools, talk to the teachers, provide them with literature about the company and invite pupils and teachers to look round their plants and see for themselves. RHP also maintains contact with the universities with the object of ensuring that students also have some understanding of industry and the career openings it can provide.

Mr. John Selby, group personnel development manager for RHP, says the initiative for school-industry link schemes must come from manufacturing companies. He adds that although some schools are not particularly enthusiastic when first contacted they rarely refuse to co-operate. Like Mr. Ashford he points out that initially some teachers see jobs in industry as "all dirt and no prospects" but he says that once they realise what is really involved they change their attitude.

The RHP scheme, like that at BP, covers secondary schools only and it is directed at pupils of all abilities.

Mr. Harry Dowson of the National Association of Careers and Guidance Teachers, says the schools themselves welcome closer links with local industries. But he stresses that companies must be prepared to learn from the schools as well as schools finding out more about manufacturing industry.

"If industrialists come into the schools and start to understand modern methods, modern maths courses and new examinations it will help them with their recruitment," he says. "If a company sets a test for job applicants that includes, say, the sort of maths questions that were in vogue 15 or 20 years ago then they should not be surprised if young people do not know how to tackle them.

"The applicant may well have the mathematical knowledge required but he is not used to questions in that form. To assume he is innumerate because he fails to answer correctly is no way of assessing his true ability."

School-industry link schemes are being watched with considerable interest by the Department of Industry. Mr. Leslie Huchfield, junior minister at the department, has visited schemes of this type and he says he has been impressed by them. He also says that in his opinion the most effective way of bringing industry and schools closer together is through action at local level.

Business courses

Office Facility Planning Seminar, London Business School, July 12. Fee: £24. Details from Elite International, 133, St. Albans Road, Watford WD2 4AG.

Finance and Accounting for Management, British Transport Staff College, Woking, July 3-7. 6-10, Frederick Close, Stanhope Place, London W2 2ED. Fee: £195 plus VAT. Details from the Secretary, British Transport Staff College, Hook Heath Road, Woking, Surrey, GU22 0QH.

Management Skills for Women, Churchill Hotel, London, July 11-13. Fee: £495. Details from AMR International, 20, Frederick Close, Stanhope Place, London W2 2ED. Fee: £195 plus VAT. Details from the Secretary, British Transport Staff College, Hook Heath Road, Woking, Surrey, GU22 0QH.

When accounting is the answer

KEY AREAS of financial control are spotlighted in a series of small booklets just published by the Institute of Chartered Accountants in England and Wales. They are aimed particularly at small firms and, says the institute, are intended to go some way towards meeting a need emphasised in the Bolton Report on small companies, specific financial problems for which looked to the accountant to play an active role in "those vital areas of management in which small businesses are weakest—costing, estimating, budgeting and financial control." The booklets are not intended to encourage "do-it-yourself" Accountants' Hall, Moorgate Place, London EC2P 2BJ.

What every cigarette smoker should know about NSM.

A new standard in tobacco substitutes.

NSM* is a totally new concept in tobacco substitutes. NSM has been developed following an extensive research programme over many years, financed jointly by Imperial Tobacco and ICI. NSM is a wholly British development.

The objective in developing NSM has been to convert natural plant material into a form which might help to reduce the risks which medical authorities have associated with cigarette smoking.

A programme of laboratory research has been completed to the satisfaction of the Independent Scientific Committee on Smoking and Health which has agreed to the use of NSM in certain cigarette brands. □ The Hunter Committee, appointed by H.M. Government.

Research has shown that when NSM burns, it produces smoke which is different in both its nature and its effects from that produced by Virginia tobacco:

1. NSM produces less than one-third as much tar.
2. NSM produces not just less tar but tar which is about one-third as biologically active (when measured by a standard mouse skin painting technique).
3. NSM produces a less irritant smoke.

The extent to which these attributes of NSM are effective in a product made from a blend of NSM with Virginia tobacco will depend on the specification of the cigarette and the proportion of NSM and tobacco in the blend.

Cigarettes containing NSM tobacco substitute will be available from July 1st.



Issued by New Smoking Materials Limited

*Trade mark of New Smoking Materials Limited

FREE IF FULL COLOUR LITERATURE

Discover the facts behind industry's £2000m investment in the County Planning Office, Cleveland.

Name the county, just an hour from Heathrow, where the first oil was piped ashore. It has one of Britain's biggest steel plants. Instant availability of advance factories in many sizes. Within 30 minutes drive of one of Britain's most beautiful national parks. House prices significantly below national average. Send for the answers.

To the County Planning Office, Cleveland County, Gunby House, Gunby Street, Middlesbrough, Cleveland TS1 1QY. Telephone: (0642) 248155. Please send me the literature.

Name: _____ Position: _____
 Company: _____ Telephone: _____
 Address: _____

cleveland

the new centre in the North East

THE FINANCIAL TIMES

Incorporating THE FINANCIAL NEWS

Head Office Editorial & Advertisement Offices: BRACKEN HOUSE, CANNON STREET, LONDON EC4A 3DF

For Share Index and Business News Summary Ring: 01-246 8024

Ireland's policy on Ulster goes in the melting pot

BY GILES MERRITT in Dublin

THE voice came over RTE Radio in the final weary hours in the Irish general election count at 3 a.m. on Saturday morning.

Mr. Lynch will form his Cabinet and take up the reins of Government in about a fortnight's time.

Hectoring criticism

Mr. Lynch and his front bench colleagues have said very little in the past 18 months to allay these suspicions.

Although an NOP opinion poll halfway through the campaign apparently established that a mere 2.3 per cent of Irish people thought Northern Ireland a major political issue.

The Cosgrave Government believed strongly that Britain must remain militarily and economically in Northern Ireland for the foreseeable future.

development against which they have been fighting all this century, as it would transform them into being the minority community.

The cornerstone of Fianna Fail's Ulster policy is Mr. Lynch's statement of October 29, 1975.

1. A central aim of Fianna Fail policy is to secure, by peaceful means, the unity and independence of Ireland as a democratic republic.

2. Fianna Fail calls on the British Government to: Encourage the unity of Ireland by agreement, in independence and in a harmonious relationship between the two islands.

From Mr. Jack Lynch's policy statement of Oct. 29, 1975.

The statement was as follows:

1. A central aim of Fianna Fail policy is to secure, by peaceful means, the unity and independence of Ireland as a democratic republic.

2. Fianna Fail calls on the British Government to: (a) Encourage the unity of Ireland by agreement, in independence and in a harmonious relationship between the two islands.

(b) Enter into an agreement guaranteeing appropriate financial support for a specified period to enable the transition to take place smoothly in stable economic conditions.

Uist's Loyalists see the scheme as a straightforward takeover; and it is, after all, the

Fianna Fail has said it borrow abroad; but it is eager to give, as their spokesmen so often put it, "one last shove".

It could be, alternatively, that the policy statement will turn out to be just so many words.

Mr. Lynch's expected personal charge of Northern Ireland policy. At present as a Foreign Affairs Minister, and the like is that it will be detached there to become a port-folio.

However, Fianna Fail win the election of Northern Ireland issue, Irish electorate's ambivalence about Ulster most certain not extend to being taken into the Ulster crisis.

The Republic's economic outlook is in fact so bleak that it contains the seeds of domestic political instability within ten years.

Mr. Lynch's party reckons the unemployment rate is now 17 per cent, and urgent moves to reduce that are required.

The snag is thought that if the Conservative attitude towards Mr. Lynch be less understanding, this could lead to an Anglo-Irish confrontation.

Systems of voting

THE GOVERNMENT'S apparent willingness to indicate a preference for a regional list system of proportional representation for elections to the European Parliament is based on the hard political need to placate the Liberals rather than any commitment to principle.

The case for some form of PR in elections to the Parliament at Strasbourg rests on the arithmetical fact that with only 81 seats allocated to Britain, the use of a single-member, first-past-the-post system is likely to produce absurd results.

A regional party list system, favoured by the Government, could keep the selection process out of the hands of the various party headquarters machines.

A summit about detente

MR. LEONID BREZHNEV, now the Soviet President as well as the party leader, is due in Paris to-day for his first visit to the West since the Helsinki summit meeting in July 1975.

As it happens, his arrival now follows closely on a number of intriguing events in the Soviet Union itself—the introduction of a new constitution and Mr. Brezhnev's own elevation to the Presidency among them.

Whether fortuitous or not, the timing is important. The Belgrade meeting, and the autumn conference for which it is preparing, could chart the course of East-West relations for some time to come.

disposed to vote against the officially preferred election system in the hope of wrecking the Bill.

Again, there are others in the Labour Party who fear that to concede PR for Europe might advance the cause of those who wish to see it at Westminster.

The Conservative fear on this score runs deeper, since the leader of the party, Mrs. Margaret Thatcher, sees a chance of winning an early overall majority in the Commons and is naturally wary of any change of voting system that might make that either impossible or very much more difficult.

As for the central issue of the method of electing the House of Commons, we must await the next General Election. If the Tories win an overall majority, the case will fall away; if there is another hung Parliament, with the prospect of further bargaining of the kind seen since the Lib-Lab agreement, then there will be an increased chance that a Parliamentary arrangement with, say, the Liberals will depend on the implementation of PR.

The Cosgrave Government believed strongly that Britain must remain militarily and economically in Northern Ireland for the foreseeable future.

The disagreement between East and West so far is basic. The Western side is insisting on a clause-by-clause review of the implementation of the provisions contained in the Helsinki document.

Occasionally one came across someone with a vast selection of gilt and enamel hammer and sickle-type badges covering a lapel. Here of the Soviet Union style, but the most ubiquitous labelling appeared to be the PLO stickers which somebody had also naughtily tacked onto the back of a police sergeant.

At that point I had to leave, sadly missing the chance to hear Zoya Pavlovna Pankhova member of the Presidium of the Supreme Soviet of the USSR speak of "Progress in the Soviet Union," the Irish Communist Party's views on the Irish question and film on the class struggle.

MEN AND MATTERS

The comrades' Jubilee

Apart from the bucket of "Stuff the Jubilee" badges on sale at the door and rather unfunny graffiti scrawled over a blow-up photograph of the Royal Family waving from a Buckingham Palace balcony, the British Communist Party's own Peoples Jubilee at the Alexander Palace yesterday was not provocatively anti-monarchist.

Occasionally one came across someone with a vast selection of gilt and enamel hammer and sickle-type badges covering a lapel. Here of the Soviet Union style, but the most ubiquitous labelling appeared to be the PLO stickers which somebody had also naughtily tacked onto the back of a police sergeant.

The mood was certainly festive, helped on by bands at both ends of the main hall, the Aswad reggae band and the "progressive" Soft Machine band not to mention Caribbean, Indian and Chilean dance groups. Proletarian internationalism was much in evidence, although, to general disappointment, the expected star of the show, Spanish Communist Party leader Santiago Carrillo was too busy in post-election Madrid to mount the platform with his British counterpart Gordon McLennan and explain the new democratic Spain.

His place was taken by Manuel Azcarate, the suave Basque who heads the party's international department. I couldn't wait for the speech but he told me that Carrillo's non-appearance did not reflect disapproval at getting less than 10 per cent of the vote. On the

Putting BP in print

Reading through the three-page BP prospectus is a daunting enough task on its own but actually printing it, and the 30 other documents associated with the "share sale of the century" has kept the City's printers and typesetters working round the clock for weeks under top security conditions.

Over 90 tons of paper has been printed, perforated, water marked, coloured, numbered and guillotined in an estimated quarter of a million pound operation that has kept the British Printing Corporation's Paul Snowsall, who has acted as the main link man between BP, the Bank of England and the actual print operation, in a state of near perpetual motion.

The decision to prepare the prospectus in newspaper form is not only more aesthetically pleasing than the U.S. version with its 63 pages of text and similar annex of financial statistics in book form but has also yielded considerable economies by allowing the same type set-up to be used for the offer documents as well, and there are over a million of those.

Berkeley Square, apart from its fame as the erstwhile haunt of nightingales, is also known as the headquarters of British Leyland as well as several international companies—including Fiat and Olivetti. A colleague was therefore intrigued to see the following sticker on a Land Rover parked in the Square.

Culture shock

The latest English language newsletter from the Japanese trading company Marubeni caught our eye. "We apologise," it said, "for the fact that the upper right photo on page 11 should read 'a funeral procession in Indonesia.' Instead of 'a typical harvest time festival in Indonesia.'"

Sing on

Berkeley Square, apart from its fame as the erstwhile haunt of nightingales, is also known as the headquarters of British Leyland as well as several international companies—including Fiat and Olivetti. A colleague was therefore intrigued to see the following sticker on a Land Rover parked in the Square.

Float postponed

You may have decided that now is not the time to seek a public quotation for your company. You may still be anxious to pay off your overdraft or realise some of your shares for cash now.

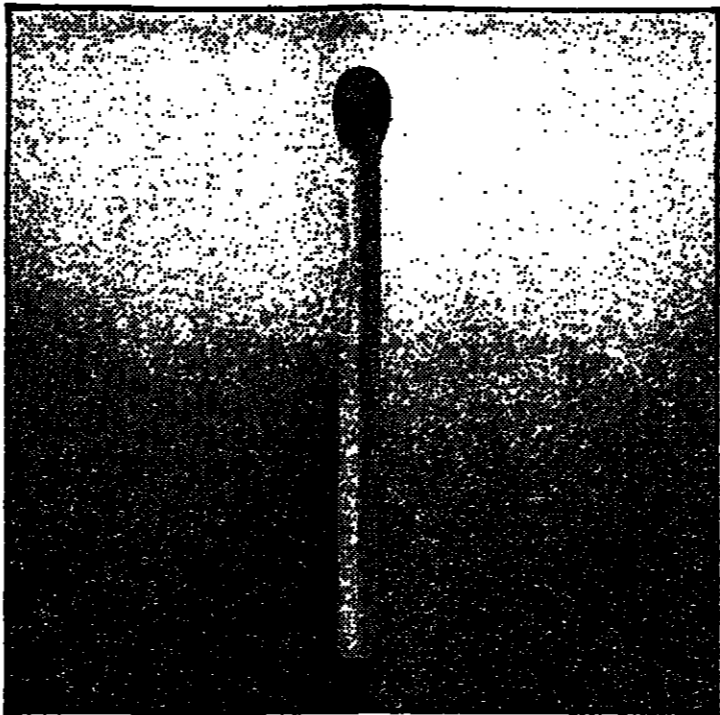
GRESHAM TRUST Where the successful private company feels at home.

The

Haza

Advertisement for Gresham Trust, featuring a logo and text about public quotations and company services.

Albright & Wilson



the source of a force for British industry.

Arthur made it possible.

Back in 1851, Arthur Albright built the first commercial plant in the world to produce the element phosphorus for the rapidly-growing match industry: a simple application of a raw material that has become of major importance to British industry. In 1977, Albright & Wilson has grown to be one of the world's largest manufacturers of phosphorus chemicals and their derivatives.

But this alone is not the extent of Albright & Wilson's importance to British industry. It is a supplier of thousands of chemical materials used in a wide variety of industries—detergent raw materials for washing powders; surfactants for liquid detergents and toiletries; raw materials and fragrances for shampoos, toiletries and cosmetics; flavours and food additives; fruit juices; natural drug extracts and organic intermediate chemicals for pharmaceuticals and fine chemicals for the chemical industry itself.

Albright & Wilson is a UK-based, international chemical company employing 10,000 people world-wide—7,000 in the UK. It has manufacturing plants in 14 countries and plans to invest £50m in the next two to three years—£30m of which is expected to be invested in the UK. In 1976, the company's exports were over £74m.

Albright & Wilson's sales are now in the region of £1m a day.

A force for British Industry

ALBRIGHT & WILSON

Albright & Wilson Ltd. 1 Knightsbridge Green, London SW1X 7QD. Telephone 01-589 6393

THE CHEMICAL INDUSTRY IV

Growing emphasis on safety



HENKEL CHEMICALS LIMITED

U.K. Subsidiary of HENKEL KGaA, Duesseldorf/W. Germany

101 YEARS

experience in the manufacture of
ORGANIC/INORGANIC CHEMICALS
and
ADHESIVES

ORGANIC PRODUCTS DIVISION - Tretol House, Edgware Road, London NW9 0HT (Tel. 01-205 6004)

ADHESIVE DIVISION - Road 5, Industrial Estate, Winsford, Cheshire (Tel. 06065-3933)

INORGANIC PRODUCTS DIVISION - Sunbeam Anticorrosives Ltd., Central Works, Central Ave., West Molesey, Surrey (Tel. 01-979 7731)

Stetley Chemical Limited

EARLY THIS year, at a conference on industrial innovation, notice was served that the Government planned to tighten control of the manufacture of new chemicals that might harm those making or using them. About 100,000 different substances, it is believed, are already used in British industry. According to the U.K. Chemical Information Service, about 4m. new chemicals have been identified in the last decade.

Mr. John Locke, director-general of the Health and Safety Executive (HSE), in a thoughtful paper on a major source of concern to his organisation, warned industrialists that under the new controls it might no longer be economic to introduce some new chemicals. The cost of safety evaluation would prove too great in relation to their likely sales and profits. But it was also the responsibility of the HSE, he said, to minimise the impact of any new regulations on useful innovation.

"It seems to me desperately important to try to avoid the difficulties which come once things have gone wrong," Mr. Locke told the conference. Whenever a chemical had been introduced widely before it was shown to be cancer-causing or toxic, the HSE was faced with demands to ban it, or to make industry spend "enormous sums" adapting plant and procedures in order to avoid exposure. The case of vinyl chloride monomer (VCM) precursor of PVC, a gas which it has been shown in the past few years can cause a rare form of liver cancer when inhaled in small quantities over a very long period, was one which "illustrates the point only too clearly." Every major mistake created demands for more and more vigorous controls over every new development.

For this reason, he argued, the emphasis should be placed on preventing disaster, by more attention to systematic investigations of the characteristics of new chemicals before they were

launched commercially. It also meant careful and systematic evaluation of the hazard of industrial plant itself, where there was risk of major explosion or the release of toxic chemicals. This was a direct reference to two of the most highly publicised chemical industry accidents of recent years—the explosion of cyclohexane at Nypro's Flixborough factory in 1974, and the release of dioxin from the Icmesa factory at Séveso last summer.

According to the *Journal Nature* earlier this month, Givaudan, the Roche subsidiary which owns the Icmesa factory, could face a bill for the clean-up operation as high as £80m. It quotes Dr. Fernando Russo, president of the commission set up by the Italian Government to assist local and regional authorities in the operation, for this estimate.

Dramatic

Nor does it appear possible to invoke "Act of God" type of explanations to avoid responsibility for such dramatic incidents at Flixborough and Séveso. In the case of Séveso, Dr. K. D. Crow, a British Government scientist consulted by the Italian Government, has pointed out that if the Icmesa plant had been designed in the same way as the Coalite and Chemical Products factory at Bolsover, which had previously suffered a similar incident, "then no such disaster could possibly have occurred."

The HSE proposals* for new legislation requiring the notification of toxic chemicals, published last week, aim to apply some but not all of the principles already established for evaluating toxicity in drugs, pesticides and food additives. In these cases the chemical is deliberately ingested or large populations are deliberately exposed.

But the HSE proposals acknowledge that the very large safety factors and extensive testing such products command may not be appropriate to the wider range of chemical products. The philosophy of regulation is to accept the need to ensure safety "so far as is reasonably practicable" and at the same time to ensure that safety standards are not set so high as to inhibit innovation unduly. The proposals would apply to

all manufacturers or importers of new substances for use in industry in quantities greater than one tonne a year. Thus laboratory chemicals are excluded, as well as new mixtures or preparations which do not include a new chemical compound. If adopted, manufacturers and importers would have to supply certain toxicity data at least 30 days before marketing the substance in Britain. They would also be asked to notify the HSE of major (ten-fold or greater) increases in the amounts they are supplying, so that the regulatory agency could keep track of the numbers of people coming into contact with the substance.

In spite of the fact that dioxin, the cause of the trouble at Séveso, was an intermediate and not the end-product of the Icmesa factory, the proposals make no attempt to cover all the intermediates produced by the industry—a truly daunting task. They reason that since the potential for hazard is highest when substances are handled frequently, notification will be required only when they are isolated and people may be exposed to them. In the case of new polymers, the HSE will need to be notified only if they are produced from or including a monomer not previously used for polymer production in Britain.

Also proposed is a coding system that would try to preserve commercial confidentiality about new products. The dossiers submitted by manufacturers would be given a code number for administrative purposes within the HSE and for communication with anyone evaluating or consulted on the data. Only information relevant to the evaluation of hazard would be passed to working groups and committees.

Where a notification scheme was already established for a particular substance—as for example in the case of pesticides, tobacco substitutes and food additives—the manufacturer or importer would be required only to advise the HSE of the name of the substance and the date and point of its notification. Only if the HSE could not then obtain the data it needed to evaluate the substance would the maker be asked for more information. The HSE has set out the kind

of information it would expect to find in the dossier for each new product (see accompanying table), the toxicity tests it wants carried out, and its estimates of the cost of making satisfactory tests. It acknowledges that the testing must make use of experimental animals, adding that "in deciding the extent of such experiments regard should be paid to striking a balance between the extent to which human beings need to be protected and the number of animals which would be involved."

Costs

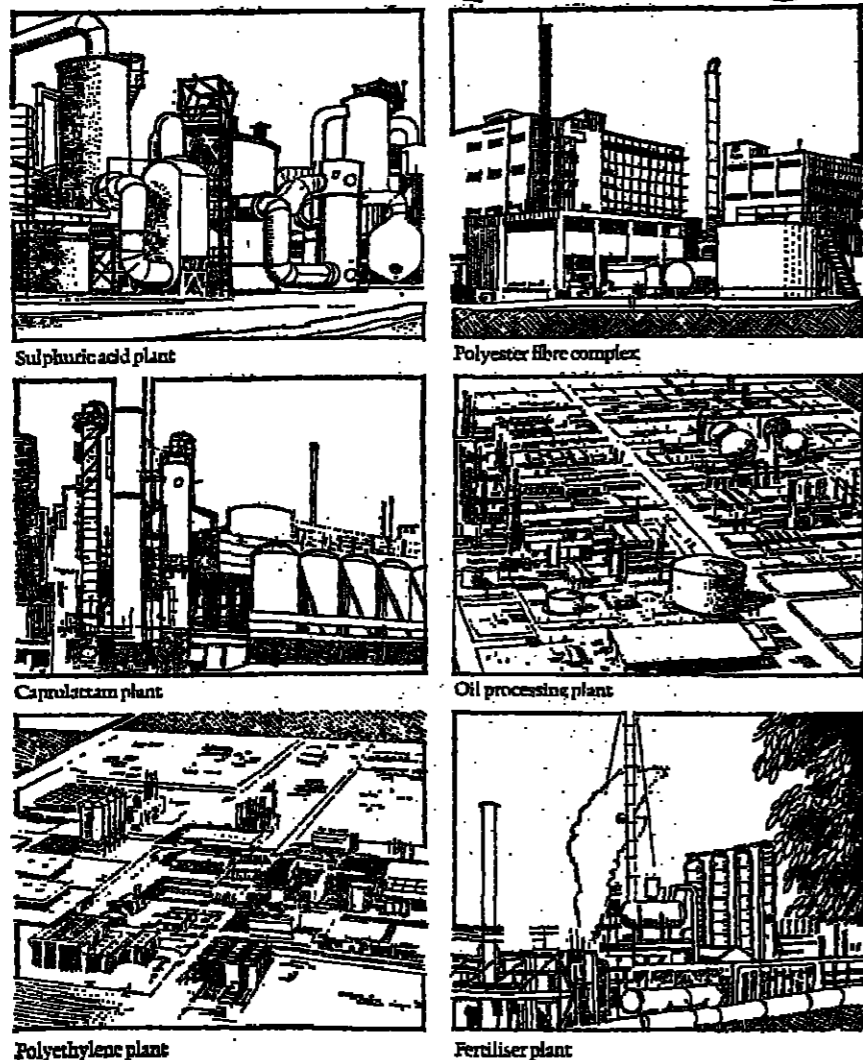
The costs vary from £50 for eye irritation tests using the eyes of rabbits, for which three experimental animals would suffice, to £100,000 for inhalation tests for carcinogenicity over the lifespan of the animals used. But the HSE indicates a readiness to accept the results of much less expensive tests in some cases. For example, it observes that carcinogenic potential can be assessed by following mutagenic changes in bacteria (the Ames test) and *in vitro* cell transformation in cultured cells. Such tests can be performed for only £500.

Thus for initial notification the HSE is proposing minimum tests, where appropriate, for the following: oral toxicity, skin irritation and dermal toxicity, eye irritation and skin sensitisation; sub-acute toxicity testing for 30 days; and one or more of the "short"—and therefore low-cost—tests for cancer, mutations and foetal damage.

In this area, however, the concern of the HSE extends beyond the workplace to the environment more generally, and how the substance might affect anyone inadvertently exposed to the new product. As initial requirements it suggests that two tests be applied both as general indicators of environmental hazard and as means for directly assessing effects in specially important areas. These tests are the chemical's toxicity to one or two species of fish, and its susceptibility to bio-degradation and hence likely persistence in the natural environment.

*Proposed scheme for the notification of the toxic properties of substances: discussion document, Cmnd. 5034, S.O. 50p. David Fishlock

From the Urals to the Mato Grosso it's Sim-Chem experience that puts it together.



Sim-Chem build chemical plant world wide. Polyester polymer in Spain and Portugal, polyethylene in Russia, phosphoric acid in Sweden, polypropylene in Brazil. In Canada, Cuba, Turkey and France you'll find Sim-Chem too. Nearer home there's sulphuric acid, dyestuffs, chlorine, agrochemicals and North Sea oil processing. Over 80 busy years Sim-Chem has accumulated the kind of technical expertise and hard headed on-site capability that gets chemical plant on stream on time. The kind that keeps budgets on target. It's experience which Sim-Chem hand to the customer neatly packaged—studies, design, engineering, procurement, construction and commissioning—all under one roof. Sim-Chem offer the chemical industry the right blend of people and processes. And the chemical industry would keep coming back for more. Sim-Chem Limited, P.O. Box 17, Chesdale House, Chesdale, Cheshire SK8 5BR. Tel: 061-485 6131 Telex: 667844. Also at London, Johannesburg, Sydney, Toronto, Bombay.

SIM-CHEM

Petrochemicals Acetone Acrylonitrile Allyl Amines Aniline Butadiene Extraction Caprolactam Carbon Tetrachloride Chloroform Cumene Detergent Alkylates Diethyltoluene Epichlorohydrin Ethanolamines Ethylene Oxide Glycol Glycol Ethers Hydrogen Peroxide Isocyanates Melamine Methyl Methacrylate Nitrobenzene Nitrocellulose Organic Peroxides Phenol Phthalate Plastics Polyethylene (LD) Polyolefins Polypropylene Polystyrene Polyurethane PVC Styrene Terephthalic Acid VCM p-Xylene General Chemicals Ammonium Nitrate Ammonium Phosphate Ammonium Sulphate Calcium Phosphate Chlorine Multi-head Furnaces Nitric Acid Films Nitro Phosphates NPK Compound Fertilisers Oleum Phosphoric Acid Sulphur Dioxide Sulphur Trioxide Sulphuric Acid Superphosphates Urea Fibres and Films Acrylic Fibres Laminated Films Nylon 6 Nylon 66 Photographic Film Bases Polyester Fibre Polyester Film Polypropylene Film Laminating Polypropylene Film

Revived interest in inorganics

ALTHOUGH NORTH SEA oil now borne out. Following the announcement by Albright and Wilson, which has its strength in phosphorous inorganic chemicals, of a major spending programme, ICI has recently unveiled a major new expansion of its chlor-alkali interests at Wilton on Teesside. This development, which is to be accompanied by a major expansion in downstream vinyl chloride monomer production, the building block for PVC plastics, is to cost £140m, and will be teamed with another major project at Wilhelmshaven in West Germany, giving ICI a broader stake in inorganics across Europe.

Furthermore, many industrial processes such as steelmaking, paper, glass and alumina manufacture are highly dependent on these and other inorganic chemical compounds, and in many cases industries are largely where they are, or have grown to their present size, because of the proximity of supplies of these essential ground chemicals.

No doubt because of their traditional role as a supplier of generally low value bulk commodities for use by major industries, inorganic chemicals have attracted relatively little attention, but as a report by the chemicals economic development committee (EDC) pointed out last year, the sector has had a good record in recent years. Although growth has been slow—largely because of the performance of the industries it serves—productivity has increased more rapidly than for chemicals as a whole. The sector was also the only one in which the EDC report was envisaging an increase in sales growth over past rates, though here again the determining factor will be the performance of U.K. industry.

This caveat notwithstanding, moves by the leading producers within recent months have suggested that some of the fears being expressed last year in the EDC report on investment prospects in inorganics—largely as a result of the high capital cost and low returns—may not be

Following the announcement by Albright and Wilson, which has its strength in phosphorous inorganic chemicals, of a major spending programme, ICI has recently unveiled a major new expansion of its chlor-alkali interests at Wilton on Teesside. This development, which is to be accompanied by a major expansion in downstream vinyl chloride monomer production, the building block for PVC plastics, is to cost £140m, and will be teamed with another major project at Wilhelmshaven in West Germany, giving ICI a broader stake in inorganics across Europe.

Modernising

BP—the second force in chlor-alkali alongside ICI in the U.K.—also announced in January that it would be spending some £15m in modernising chlorine production at Sandbach in Cheshire, where like ICI it has access to the very extensive local salt-beds. The BP expansion will enable the company to raise its capacity from 55,000 tonnes to 82,000 tonnes per year.

The move by ICI is particularly interesting because it indicates that inorganics, as in other chemical sectors, the need to develop a European scale of operations has now become necessary. For, as ICI has pointed out, the investment will not only enable it to broaden its base but will also help to protect its major investments in the North West where its Mond division which produces inorganics has its headquarters and main production centres.

At present, though, about one third of the division's sales go overseas most of the bulk items are consumed by U.K. industry. Limestone quarried in Derbyshire by Mond is used in steel manufacture, agriculture, sugar refining and construction as well as in a highly refined form in the rubber and plastic industries.

Soda ash, formed by processing brine pumped up from the salt beds, and limestone are essential to the manufacture of glass, and are exported to countries in Scandinavia and Africa where the glass industry has no local supplies. Chlorine produced from brine is widely used in various chemical manufacturing processes and in water purification, and caustic soda, a co-product made along with chlorine, finds outlets in alumina refining, rayon manufacture and other chemical processes.

The bulk of chlorine, however, is used in producing derivatives, of which vinyl chloride, the raw material for PVC, and chlorinated solvents are the most important. It is to protect its position as a major producer in this area that ICI has now mainly made its move into Europe. ICI is in competition with a number of major European chemical groups in VCM and has seen positive dangers in dependence on lower U.K. growth rates.

By moving into manufacture of chlor-alkali products around the North Sea basin the company hopes to take advantage of European rates of growth and be in a position to supply—on world-scale plant—British demand as it increases. Otherwise, according to ICI, the chances are its competitors would be able to move into the U.K. as well to take a major share of the business.

The decision to expand in chlor-alkali follows another move by ICI indicating its commitment to inorganics—the decision to spend some £70m over a period of years revitalising its soda ash production in order to ensure continuity of supply to the glass industry. As a first step a total of £11m is now being spent at its Winnington works on modernisation of equipment, and other soda ash units will also be improved.

A possible question-mark had been raised over soda ash production as a result of the start in the U.S. of mining of natural

Who

Steetley Chemicals Limited is a new company, with a long history and a lot of experience. You see, changed our name recently—from Berk Limited. But there's a little change been made to the excellent service we give our customer: only for the better.

What do we manufacture?

A wide range of special chemicals including inorganic salts. Organic bromides. Bromides & bromates. Mercurial compounds. Non-ferrous metal powders. Polyacrylamides.

What do we trade in?

Organic, inorganic & chemicals. Rare earths. Concrete admixtures. Natural drugs & botanicals. Horticultural products. Chemical specialties. Environmental control and industrial cleaning.



STEETLEY CHEMICAL LIMITED

Chemicals Manufacturing Division, Canning Road, Stratford, London E15 3NX. Tel: 01-534 6644 Tlx: 2538

Chemicals Trading Division, Berk House, P.O. Box 56, Basing View, Basingstoke. Hants. Tel: Basingstoke (0256) 29292 Tlx: 358371

Jeff... file

THE CHEMICAL INDUSTRY V

The new production centres

Steelley Chemical Limited

PLANNING of major petrochemicals projects in the oil-rich nations appears to have entered a new and more rational phase over the course of this year. Wild potential production figures are no longer bandied by Arab consultants and even the most diehard executives in the Western petrochemical industry are coming to terms with the inevitable nature of Middle East involvement in the chemical markets of the future.

Their efforts most firmly towards Saudi Arabia, with its massive feedstocks potential and willingness to create a business environment in which the Western partner can retain maximum control of the project. As a result, Shell Oil, Mobil, Exxon Chemical and Dow Chemical are well advanced with the planning of major olefins and/or aromatics complexes in the early 1980s, often linked to substantial refinery investment. Japan's Mitsubishi and W. R. Grace of the U.S. are also involved in major project studies.

Initiative

In Iran, the outside investment initiative remains with the Japanese through the massive and highly integrated Iran-Japan Petrochemicals project at Bandar Shahpur, involving a wide consortium of Japanese companies in conjunction with

Iran's National Petrochemicals Corp. and still aiming, despite financial and other troubles, for a first-phase commissioning date of 1980.

Algeria, Iraq and Libya are still aiming to build up their own chemical industries from scratch with minimal Western help except at the plant construction stage. This independent line will obviously do little to smooth the initial stages of development and projects in these areas are likely to be subject to far longer delays than others in the Arab world. But once these projects are underway, they would have the potential to be among the most disruptive in international chemical markets.

Projects in these areas may well be poorly co-ordinated in terms of derivatives plants and marketing strategy, while their lack of large-scale domestic markets could mean that "unconnected" products will reach world markets at relatively

arbitrary prices as the plant operators scramble for a place on the international petrochemical stage.

The role played by the German construction consortium led by Salzgitter in Libyan petrochemical developments and the \$1bn Japanese economic co-operation pact covering certain projects in Iraq may prove an insufficient safety valve to rationalise the urgent ambitions of this area.

Among the major European companies new alliances are forming up with the smaller OPEC nations. France's Cof Chimie is involved in a large ethylene and polyethylene complex in Qatar, while West Germany's giant BASF, known to have harboured strong reservations over Middle East petrochemical opportunities over the past few years, is showing interest in studies on a large olefins and aromatics complex in Kuwait.

Germany's other giant chemical concerns, Hoechst and Bayer, have engaged on project studies in Iran but both appear to be marking time at present. Both companies' cash resources have been strained by disastrous fibres losses and heavy investment programmes in the U.S. Bayer's plan for a large "petrochemical refinery" at Dinslaken in Germany in association with cash-rich BP Chemicals through their joint Erdolchemie company may well take preference over earlier aromatics project studies with Hoechst in Bushehr.

Italy's large chemical companies have been relatively inactive on the Middle East investment scene, mainly because of their straitened financial circumstances. But, must have been heavily involved in extensive compensation or "buy-back" deals with Eastern Europe.

If the Middle East countries are no longer flaunting exaggerated estimates of potential production, their estimates of domestic and export future demand still appear badly off-beam. There can be little doubt that the massively increased cost of petrochemical plant investment in the developed world, coupled with rising environmental constraints, will leave a gap to be taken up by the Middle East. But the size of the gap is strongly disputed, particularly in view of the widely-publicised "three years of lost growth" said to have gone by the board in Europe during the recession.

Arab sources, for example, are still coming up with numbers to suggest that the U.S. and Japan will require another 37m. tonnes/year or new ethylene capacity in 1980-1990. By contrast, U.S. estimates based on generally agreed 7 per cent growth rates suggest that little more than 10m. tonnes/year will be needed in the U.S. Of the Arab total, some 17m. tonnes/year was earmarked for additional European needs, against industry estimates of little more than 8m. tonnes/year. And as an ECN survey pointed out earlier this year, some 15 ethylene projects are already underway in Europe itself, to add a maximum potential of 5m. tonnes/year by the mid-1980s.

Arab estimates of European demand for the commodity plastics high and low density polyethylene and polypropylene by

1990 are also 1.25m. tonnes/year adrift of consensus European forecasts.

The same ECN survey showed that some 19.6m. tonnes/year of new ethylene capacity will be added worldwide in 1978-80 period, including 6.4m. tonnes/year in Western Europe and 6.1m. tonnes/year in the U.S. The Near and Middle East will have only 840,000 tonnes/year of ethylene capacity by 1980, a volume slightly lower than that of Latin America, which plans to add 960,000 tonnes/year by 1980.

Despite these anomalies, it is clear that Middle East petrochemicals will be a growing factor in world markets within ten years. It is equally clear that Europe is widely seen as a market for some 70 per cent of Middle East production. "It's going to be your problem," said a leading U.S. executive at a recent European conference. "Although the major Japanese companies are involved in Middle East projects, history indicates that more emphasis will be placed on fulfilling their global export commitments than supplying their domestic market."

Warning

Here, perhaps, lies a note of warning. The trading arms of the giant Japanese companies involved in the Middle East have lost out badly in the European market since the oil crisis, high crude oil costs in Japan having heavily eroded their previous cost advantage on downstream chemical products. Priced out of many bulk petrochemical markets in Europe, some Japanese traders have switched their efforts to speciality products where added-value is greater and manufacturing and transport costs far less crucial.

But the potential for this is limited and there is a strong industry impression that many Japanese companies will be eager to reassert themselves in the European petrochemical market with Middle East product when the time comes. Efforts are now being made in the Arab States to co-ordinate petrochemical investments and avoid duplication and market disruption. But Western observers place little faith in these moves, believing that national ambitions will always win out. After all, why should

the Arab States be immune from a malaise which has afflicted the supposedly developed petrochemical industry of Europe for so long?

Already the pressure points for the future are clear. Methanol, until large-volume new markets are found in the form of fuel outlets or single-cell proteins, will be one, along with aromatics and derivatives, commodity plastics, ammonia and urea. Wise companies in these sectors in Europe will already be planning a defensive strategy for the mid-1980s.

If the petrochemicals investment initiative still lies narrowly with the industrialised nations, one area of the chemical industry which has already witnessed a profound switch is fertiliser raw materials.

A massive 40m. tonnes/year of new ammonia capacity will be commissioned worldwide in the 1978-80 period, overwhelmingly based in areas of high consumption. Russia alone will add some 13m. tonnes/year, while India and mainland China will add around 11m. tonnes/year. Europe will add some 2.8m. tonnes/year over the period, but no new plants are envisaged after this year. The U.S. will add 5.2m. tonnes/year over the period but because of the increasing natural gas squeeze, few new projects are likely to be announced in the future.

The Near and Middle East will add 2.9m. tonnes/year over the period but new project studies are coming off the stocks faster than in any other sector as the framework of a massive agricultural programme is put together.

The manner in which certain West European governments, chemical companies and plant contractors are putting together many of the credit arrangements and huge plant deals on ammonia and other products with Eastern Europe is a source of acute controversy.

Very often, plant construction deals with Western contractors are being carried out under "buy-back" or compensation deals, in which ammonia and other chemical products will flow back to the West in payment for the contract. In the scramble to extend credit lines to Russia, no major European country has remained immune from the buy-back deal. Germany alone has signed up

to take back large volumes of polyethylene, PVC, phthalic anhydride, urea, ethylene oxide, dimethyl terephthalate, paraxylene, methanol and crude cotton from Russia under such deals.

France will be getting major tonnages of polystyrene, ammonia, orthoxylene, paraxylene, methanol and naphtha, as well as a variety of other chemical intermediates. Italy will take back ammonia, urea, acrylonitrile and other intermediates.

The U.K.'s major buy-back deal to date is the recent Davy Powergas methanol plant construction contract with Russia, under which 200,000 tonnes a year of methanol will flow back into the U.K. to be marketed by ICI.

Convinced

Many observers are totally convinced that the European chemical industry will inevitably be caught in the grip of an export pincer movement within the next decade, subject to huge and disruptive product flows from Eastern Europe and the Middle East. Fertiliser shipments from Eastern Europe already hold a major market share in Europe, while synthetic rubber, for example, from this source accounts for 20 per cent of the French market and nearer 30 per cent in Holland.

They argue that America's lower crude oil cost will keep the country as a large-volume exporter of certain key petrochemicals to Europe in the medium term and point out that Spain and to a certain extent Scandinavia will increasingly regard Europe as a natural export market.

It is easy to over-dramatise the position but equally easy to fail to recognise the cumulative effect of import pressure in crucial chemical sectors. The European chemical industry will undoubtedly come under mounting import pressure over the next decade, particularly in its bulk sectors—pressure which, for political reasons, protective measures will do little to combat. The major companies best equipped for the next decade are those already planning evasive action or counter-strategies.

Andrew Staines, Editor, European Chemical News

Inorganics

CONTINUED FROM PREVIOUS PAGE

soda ash, which it conducted on a wide enough scale could result in a product with cost advantages over the manufactured product. ICI has now evidently decided that, coupled with its further investment in chlor-alkali, its modernisation of existing soda ash plants will give it a cost structure which will enable it to continue to produce soda ash at competitive rates for the glass industry, and the other user industries including in particular detergents manufacture.

ICI's other long-term objective in the chlor-alkali field is the consolidation of its limestone supply base. While salt, because it is both plentiful and underground, presents comparatively few problems, ICI's limestone is concentrated in the Peak District National Park and has to be quarried with an inevitable impact on the environment. The company is now awaiting the results of a public inquiry which it hopes will enable it to move to a new face near its existing quarrying area, so that equipment for crushing the rock already in operation can be used.

Another major extractor of U.K. materials is Laporte, which

is the main supplier of Fuller's Earth, mined from deposits in Surrey and Somerset and widely used in the foundry, motor, civil engineering and oil industries, including North Sea exploration. The company is also a major producer of fluorspar, mined in Derbyshire, where ICI also has fluorspar operations. Fluorspar in processed form is used in a large number of industries, including steel and aluminium manufacture, glass, ceramics and electronics components.

Laporte also makes at Widnes a range of catalysts and molecular sieves for petrochemical, refinery and chemical operations, and for drying and purification. Through its other general inorganic chemicals Laporte, which last year had total sales of £131m, is also strong in sulphuric acid, sulphates, alums and other inorganic salts used in a variety of industries including chemicals, and paper making and in water and effluent treatment.

More than £44.5m. of group sales last year was accounted for by the company's half-share in Interox, which produces a variety of peroxxygen products for the paper, textiles, plastics, chemicals, detergents, bleaches, water-treatment and effluent control sectors. The group

earlier this month announced a rights issue of £3.2m. intended to help finance its investment in these and other fields which it is estimated will total £20m. in the course of 1977 and 1978.

A total of £3.5m. will be spent on the expansion of the group's titanium dioxide plant at Stalhamborough—a product for which there has recently been a return to strong demand. Laporte is one of the principal U.K. producers of titanium dioxide, a white pigment using both chloride and sulphate routes, though in the U.K. the biggest producer of this product—sold mainly to the paints, plastics, fibre and paper industries, is Tioxide.

Elsewhere in the inorganics field Britain is a major force in phosphorus through Albright and Wilson, one of the four big world producers of the element, which is widely used in detergents, food processing and other industrial processes. Here, to take advantage of cheap energy, Albright and Wilson has concentrated production of thermal route phosphoric acid from phosphate rock at two plants in Canada, shutting down older facilities in the U.K.

The company has invested heavily in the U.K., however, in production of phosphoric acid

by a cheap acid process where it has established a world lead over other producers. A new plant increasing existing capacity at Whitehaven in Cumbria for the production of phosphoric acid to around 250,000 tonnes per year by this route was announced by the company two months ago and is due for completion by mid-1979.

The latest spending plans by A and W follow moves already taken to expand U.K. output of sodium tripolyphosphate (STPP), a key constituent in detergents by 50 per cent. The product has come under attack in a number of markets—the U.S. and Germany in particular—as a possible cause of excessive algae growth in lakes and rivers, and as a result some of the big U.S. and Continental soap manufacturers have switched to other detergent builders. A and W is not expecting the same pressure to develop, however, in the major markets it serves including the U.K., and expects to be able to continue expanding sales of STPP-based products in a number of other markets in the developing world where detergents are replacing soaps and oils.

Rhys David

ICI—the inside story.

Pollution: Is Britain winning the battle?

Advertisement for Pollution: Is Britain winning the battle? featuring a photo of a factory and text about environmental challenges.

"Effective management has to become a shared objective"

Advertisement for Effective management has to become a shared objective? featuring a photo of people in a meeting and text about management.

For youngsters, unemployment brings lack of purpose. We're determined to avoid that deprivation here?

Advertisement for For youngsters, unemployment brings lack of purpose. We're determined to avoid that deprivation here? featuring a photo of a young person and text about unemployment.

It's a common British cry: we did the research, but nothing happened. ICI has the muscle to follow through!

Advertisement for It's a common British cry: we did the research, but nothing happened. ICI has the muscle to follow through! featuring a photo of a factory and text about research and development.

What kind of company is ICI? How does it take its major business decisions? What is its attitude to the environment? To its employees? To society in general?

These are some of the questions answered in a unique series of advertisements that will be appearing in the Financial Times and other newspapers over the next few weeks.

They consist of in-depth interviews by Robert Heller, Editor of Management Today, with leading ICI men: Peter King, Research Director of ICI Agricultural Division; Philip Chipperfield, Director of ICI's Brixham Laboratory; Frank Rots, Works Manager and Technical Director of ICI Holland; Brian Jenkins, Personnel Director of ICI Petrochemicals Division at Wilton; and Geoffrey Richards, Works Manager of ICI Organics Division works at Grangemouth. The interviews are frank, honest and searching. They provide a fascinating insight into the workings of Britain's largest private sector company. Don't miss them.

If you manufacture goods on the Continent, you can actually increase your exports from Britain!

Advertisement for If you manufacture goods on the Continent, you can actually increase your exports from Britain! featuring a photo of a factory and text about international trade.

Ideas in action



Vertical text on the left margin: What do we manufacture? What do we make in? STEETLEY CHEMICAL LIMITED

THE CHEMICAL INDUSTRY VI

WORLD'S LATEST IN AMMONIA PLANT

The largest single stream ammonia production unit in the UK featuring:—
Humphreys & Glasgow steam reformer
ICI quench ammonia converter
ICI catalysts
Most efficient conversion of natural gas to ammonia

Ammonia IV, ICI's new £40 m. ammonia project at Billingham was commissioned in mid-January 1977. From the introduction of natural gas feedstock to initial ammonia production was only 24 days and 11 days later the plant reached its nameplate capacity of 1100 tonnes/day. Since then the plant has run continuously at daily capacities exceeding 1200 MTPD.

Experience by H&G and ICI so far amply demonstrates:

- that the plant is most efficient in terms of conversion of natural gas to ammonia and in overall thermal efficiency.
- that the high standards of environmental control, noise, safety and operability have resulted in a plant that is extremely quick to start up and easy to operate.
- that the extra care and attention paid to reliability has been amply rewarded. The plant has been on-line for 67 out of the first 70 days since ammonia production began.

Humphreys & Glasgow is delighted to have been the main contractor to ICI and to have been responsible for the design, supply, technical supervision of erection and commissioning for such a highly successful plant.



HUMPHREYS & GLASGOW LTD
International Contractors and Consultants since 1892

22 CARLISLE PLACE · LONDON SW1P 1JA
 Telephone 01-828 1234 · Telex 261821

BOMBAY · SYDNEY · CALGARY · TORONTO

Storage and distribution

EVEN THOUGH few would argue that the safety record of those involved in the storage and distribution of chemicals is anything but reasonable, safety continues to be a central consideration.

Part of the difficulty is that no-one collects data with sufficient reliability to be able to point to an improving trend, and matters are sharpened by the inevitable surge of public attention which is prompted by a major disaster, such as the damage done to a Bedfordshire village by a runaway tanker, the loss of highly dangerous chemicals overboard in the Adriatic, or even the Flixborough explosion.

The industry would not appear to be in any great danger of complacency over safety matters and indeed there are instances where distribution storage interests, such as the ports, have taken strong unilateral measures in an effort to push a dilatory Government into a more urgent appraisal of national standards.

There are, however, some less than beneficial aspects of this safety first atmosphere. The most obvious of these is the pressure put on the transporter

of dangerous goods to modify a fleet of road tankers or ships to meet ever more exacting international conventions. The pressure exerted simply by the construction standards drafted by the Inter-Governmental Maritime Consultative Organisation (IMCO), the United Nations agency, in its 1971 code have been considerable and the effects will continue to be felt on fleet operators well into the 1980s.

Matters are further complicated by the fact that in spite of the enormous respect which most maritime nations have for IMCO, countries retain the power to modify or indeed totally reject its strictures. In the case of the U.S., for example, vessels using its ports are in some cases required to meet conditions even more stringent than those advocated by IMCO, yet at the same time the Americans have exempted their own domestic fleet from IMCO standards on bulk carrier design for five years beyond the 1978 deadline in order to protect it from too rapid and therefore too costly a period of change.

Contents

This labelling programme—under which tankers must carry information about the contents of their tanks, the appropriate measures to be taken in the event of an accident and the telephone number of an informed contact—is part of a general programme being undertaken by a working group of the Health and Safety Executive to draft regulations to control the movement by road of all hazardous substances.

Eventually, the Commission envisages that controls on the construction of tanks, parking procedures and emergency arrangements will apply to all surface transport, including rail and inland waterways.

In the case of aircraft, which have become increasingly important, especially for the conveyance of fine chemicals and pharmaceuticals, there has been an even more recent growth of concern about safety matters.

The International Civil Aviation Organisation has embarked on a programme to produce a set of international standards and recommended practices, to be supported by a technical manual which, it is hoped, will be comparable in influence with the IMCO codes. At present, although most countries have some form of regulations governing transport of dangerous substances by air, it is still possible to find freight routes where air personnel and airports are not informed of the presence of dangerous substances within consignments. As the importance of air freight has grown for the chemical industry, so has the incidence of accidents involving delay and damage to goods and aircraft.

Disasters

Although major international disasters involving chemical carriers are not unknown (the Italians have since 1974 been faced with the problem of what to do about 800 drums of tetra-methyl and lead tetra-methyl lying on the bed of the Adriatic and with a devastating pollution potential), the majority of incidents in which there is a danger to human life occur on board ship. The IMCO dangerous goods codes help international communication, but in some cases markings still leave much to be desired.

Anxiety is also awakened by new developments in shipping, such as the hydrofoil (IMCO is again investigating) and, much more important, the growth of roll-on roll-off freight. A ro-ro vessel has none of the inbuilt safety of a sectionalised tanker and the presence of chemicals or gas tankers on a vehicle deck raises hazards which hardly need explaining.

With containers, also a growing mode of transport, the problems are not so great and documentation tends to be more thorough. Most operators succeed in carrying dangerous goods boxes on deck rather than below, and ports like Southampton have seen the need for ample but special facilities for dealing with a damaged con-

Ian Hargreaves

Difficult times for fibre producers

OVER THE past few years, as the results of the major companies continue to show, textiles and fibres in particular—have been a remarkably easy method of losing money, and although last year's losses were down on the previous year they were still very substantial.

Thus ICI managed to lose £11m. in fibres in 1976—following a £31m. loss in 1975—and is midway through a major cost-cutting programme. Rhône-Poulenc, the big French chemical producer, lost Frs.550m. (£84.7m.) on its textile operations last year, while Montedison, the fibre arm of the Italian Montedison group, lost a total of L.99.9bn. (£86.6m.) and Akzo, the Dutch group, Frs.142m. (£33.4m.) in its joint Dutch-German Enka-Glanstoff fibre activities. Even among the normally efficient German

chemical companies heavy losses have been sustained, with Hoechst announcing a deficit of DM.167m. (£41.7m.).

Although this year is likely to prove somewhat better—partly as a result of the major restructuring most of the companies have introduced—all but one or two groups will be recording their third successive year of losses. Already in the first quarter of 1977 losses have again been announced by a number of groups including Hoechst and Akzo, and on the Continent conditions in the textile market, the most important outlet for fibres, are still depressed, with fibre prices remaining weak and some destocking taking place for ending the build-up in stocks at the end of last year in anticipation of higher demand.

In Britain, too, demand for fibres has reached a plateau after last year's recovery from the very depressed levels of 1975, and in the first quarter despatches by the printers actually slipped back a little on the figures achieved in the last quarter of 1976. Despite this Britain remains the bright spot on the fibres scene in Europe, with the producers sustaining present levels of output largely on the basis of the improved export performance of many of the big groups.

Prolonged

The problems in fibres have been caused to a large extent by the prolonged world recession, but a variety of other complex factors have also been at work. Fibres because of their position at the start of the textile pipeline suffer to an exaggerated extent, whenever there is a recession or an increase in ordering at earlier stages. Work done by the International Fibre Producers committee in Paris (CIRFS) has shown that while there might be a year's supply of fibre in the textile pipeline under normal circumstances, boom conditions have seen it rise to as much as 18 months while the very deep recession of 1975 produced a cut-back to the equivalent of only seven to eight months' supply.

The recession has also been made particularly severe for the customers in Europe of the fibre industry—the textile producers—because of the very large growth in imports of finished goods over recent years. Prof. J. Juvet, director general of CIRFS, points out at a conference at the Shirley Institute in Manchester recently that while Europe had shown a surplus in its trade by volume in textiles in the 1960s this had now been converted into a substantial deficit. Whereas the market had remained static at around 4m. tonnes a year total fibre content since 1971, imports had grown to exceed exports by 400,000 tonnes in 1975, and in 1976 were likely to be 550,000 tonnes greater. Thus the textile industry, which absorbs about 50 per cent. of fibre production, had lost 10-12 per cent. of its market.

The hopes of the European fibre groups for some improvement in their fortunes towards

the end of the decade are based in part on the negotiations now taking place in Geneva under the framework of GATT aimed at finding a replacement for the current Multi-Fibre Arrangement, the agreement which regulates world trade in textiles.

The European industry has been pressing the EEC, which is negotiating on behalf of the member countries, to seek a significant reduction in the rate of growth in textile imports into Europe in the next round of the MFA which is due to come into effect from January 1 next year. Under the present agreement importing countries can under certain conditions limit the growth of imports of sensitive products to a minimum 6 per cent. increase per annum—a growth rate which has proved far too generous in the recession conditions of the past three years, the European producers are claiming.

Furthermore, the industry has been arguing that because of lack of agreement among the member countries and delays in negotiating with the developing countries Europe failed even to make the most of the arrangements as they stood. Thus while the EEC's imports of textiles and clothing increased by 53 per cent. between 1973 and 1976, the U.S., applying the same agreement, managed to limit its increase to only 12 per cent. and Japan's imports actually fell.

Yet it is Europe which has stood to suffer most from a high import growth rate because of the much higher base levels already established in some Community countries as a result of historic links with major textile suppliers such as Hong Kong. EEC imports per head from the developing countries stood at \$20 in 1975 against \$17 for the U.S. and \$12 for Japan.

Essential

The Geneva negotiations are likely to last for much of this year and the developing countries will clearly not be anxious to see any substantial extra restrictions placed on their access to European markets. Nevertheless, as the fibre producers have been pointing out, changes are essential if the industry is to survive and keep pace with technological change.

Without a common approach by the authorities in Europe towards dealing with the problem of textiles and clothing imports penetration, Europe's petrochemical industry, which currently sends some 20-25 per cent. of its output into man-made fibres, will also be threatened. Furthermore, assuming an annual increase of 6-8 per cent. in imports, and a loss of one job for every extra tonne of net imports, up to 1.5m. jobs in the 4m. strong European textile and clothing industry could be lost by 1985, CIRFS is claiming.

But while hopes for the future rest largely on changes in the terms on which the industry has to compete, the producers have already had to make major efforts to restructure their existing operations to face present

SIR
45 YEARS OF CHEMISTRY

PETROLEUM PRODUCTS
 PETROCHEMICAL AND CHEMICAL PRODUCTS FOR INDUSTRY AND AGRICULTURE
 SYNTHETIC RESINS
 PLASTICS MATERIALS
 ELASTOMERS
 SYNTHETIC FIBRES
 FINE CHEMICALS
 INDUSTRIALIZED BUILDING
 TEXTILES
 PLASTIC FILMS
 PACKAGING
 FOAMED POLYURETHANES

STYRENE POLYMERIZATION
 POLYMERIZATION OF VINYL MONOMERS
 POLYMERIZATION OF ETHYLENE
 POLYMERIZATION OF PROPYLENE
 POLYMERIZATION OF BUTADIENE
 POLYMERIZATION OF STYRENE
 POLYMERIZATION OF ACRYLONITRILE
 POLYMERIZATION OF METHACRYLAMIDE
 POLYMERIZATION OF VINYL PIPERIDINE
 POLYMERIZATION OF VINYL CARBAZOLE
 POLYMERIZATION OF VINYL PYRROLIDONE
 POLYMERIZATION OF VINYL IMIDAZOLE
 POLYMERIZATION OF VINYL THIAZOLE
 POLYMERIZATION OF VINYL PYRIDINE
 POLYMERIZATION OF VINYL NITRILE
 POLYMERIZATION OF VINYL SULFONE
 POLYMERIZATION OF VINYL SULFOXIDE
 POLYMERIZATION OF VINYL Sulfone
 POLYMERIZATION OF VINYL Sulfone
 POLYMERIZATION OF VINYL Sulfone

BHRA FLUID ENGINEERING
 the independent contract research association

continues to grow because it specialises in cost-effective solutions for all fluid engineering problems, including mixing, liquid/particle separation, de-gassing, and fluid sealing

Details of BHRA's services from:
 The Director of Research
 BHRA Fluid Engineering
 Cranfield, Bedford
 MK43 0AJ, England

Income	1966: £140,000	1976: £1,300,000
--------	----------------	------------------

bhra fluid engineering

"Chemicals require careful efficient handling and selection. That's why we use Apollo Freight."

SAY HERCULES POWER COMPANY LTD

And no-one knows this better than Hercules, who utilises Apollo Freight's storage and distribution services for their range of chemicals which have an essential use in resins, adhesives and paint. After all, Apollo do have 850,000 square feet of cold and covered space throughout the UK.

But bricks and mortar ARE JUST ONE ASPECT. You need astute, professional SERVICE—and Apollo specialises in delicate tasks. Write for full details.

APOLLO FREIGHT LTD.
 16 Bedford Road, Bedford, Essex
 Telephone: 0762 862244
 Telex: 885472
 Leaders in freight technology.

TUFILIN
 Process Valves at
EUROCHEM STAN 253
 WOUBURN GREEN, BUCKS. TEL 06285 2486

Journalist

THE CHEMICAL INDUSTRY VII

North Sea boost for plastics

BRITAIN'S EMERGENCE as one of the world's top oil and gas producers should benefit all sectors of the petrochemical industry, none more so than the plastics manufacturers and processors. Studies being conducted by the Departments of Industry and Energy show that four major ethylene plants might be built in the next eight years with the possibility of a further three or four in subsequent years.

These crackers will produce the basic building blocks for the petrochemicals industry, but it will be the downstream operations, like plastics processing, which will give Britain the biggest balance of payments boost. The need to upgrade valuable oil and gas resources is one being constantly emphasised by government.

A relatively small proportion of crude oil consumption, around 6 per cent, goes to the production of chemical feedstock. Of this around 50 per cent goes into the manufacture of plastics. But the value of oil, as used by the plastics industry, rises considerably as it is transformed into finished products. The added value ranges from a 12- to 20-fold mark-up for most simple products to many times higher for more sophisticated items.

The importance of added value is being emphasised by the British Plastics Federation (BPF) in one of its latest campaigns, not only as a means of highlighting balance of payments benefits but also as a means of enabling member companies to focus attention on profitability in relation to labour costs and raw materials.

During the past year or so the Federation has repeatedly called on the Government to provide more incentives for plastics processors. It pointed out that the upgrading benefits derived from the use of North Sea oil could be enhanced if the plastics industry could be given fiscal (perhaps taxation) help to expand more rapidly than currently envisaged.

Incentives

The Government has looked at the possibility of providing new incentives for the chemical industry in general but its present attitude seems to be that there are already sufficient carrots. It is said in Whitehall that the availability of development grants, boosted perhaps by a slice of the Government's new £100m. selective investment scheme, and the availability of North Sea feedstock, are sufficient to secure the development of at least four crackers and the associated downstream activities.

Consequently the Plastics Federation has changed its tack, at least for the time being. It is concentrating more on a drive to improve profitability and to generate funds to meet the cost of expansion.

Raw material costs are now settling down after four years of unprecedented rises. The BPF's economics committee reported last month that the costs of industry's basic materials were still rising at an unacceptable rate, however. The wholesale price index for the first quarter of 1977 showed a rise of 6 per cent on the previous quarter, while the cost of materials and fuels purchased rose by 3.5 per cent. The industry is particularly concerned about meeting the cost of new plant and safety provisions.

Even so the plastics business trends survey for the period January-June shows that there is a high level of business confidence in the plastics sector, where many companies ran at or near full capacity for part of 1976. The survey revealed a substantial increase in the percentage of companies with short-term investment plans: 81 per cent of companies expected to approve capital expenditure during the early months of this year; of these 60 per cent were approving more in real terms than they spent in the second half of last year.

There were, however, indica-

ESTIMATED U.K. CONSUMPTION OF PLASTICS MATERIALS 1972-80 '000 tonnes

	1972	1975	1980 estimated		Average annual growth (%)	
	actual	estimated	low	high	1972-80	1972-75
PVC	274	330	500	545	3.7-4.8	-4.1
Polyolefins	548	550-570	1,100	1,100	8.1	0.1-1.3
Styrene polymers & copolymers	194	170	305	320	5.8-6.5	-4.3
Other thermoplastics	180	135	240	250	5.2-6.3	-5.5
Total thermoplastics	1,276	1,195	2,145	2,225	6.7-7.2	-2.2
Thermosetting	355	400	420	430	2.1-2.4	4.1
TOTAL PLASTICS	1,631	1,595	2,565	2,655	5.8-6.3	-0.7

Source: BPF and industry estimates.

tions that this high level of investment would not be sustained during this second half of the year. Overall, companies are expecting a rise in home sales although the level of increase is less marked than in the past two years. Those in the processing and machinery sectors—particularly pipe manufacturers—are still feeling the effects of the recession in the construction industry and the cut-back in public expenditure.

According to the Federation, exports to the European Economic Community look particularly healthy, with 88 per cent of companies looking for an increase. On the other hand there was a "disturbing" increase in the level of imports, particularly semi-finished products such as sheet and film. Earlier this year the National

Economic Development Office announced that it was to invest 57 per cent to £295m. while imports rose by almost 90 per cent to £289m.

The NEDO Plastics Steering Committee is particularly concerned that the share of world trade enjoyed by U.K. processed plastics is much smaller than that of other leading EEC countries. It is pointed out that West Germany supplied some 24 per cent of total exports to the rest of the world in 1974 while the U.K. accounted for only 5 per cent. In the EEC Britain's share of exports amounted to a mere 3 per cent, compared with West Germany's 32 per cent and France's 14 per cent. Apart from the balance of payments considerations the industry's apparent lack of success in export markets is regarded as a threat to stable employment prospects. Through employment grew by 35,000 jobs

to 162,000 between 1969 and 1974 there was a significant fall in jobs in 1975 and early last year.

General comparisons, founded on basic statistics, can be misleading, however. Much of Germany's performance can be credited to the presence of its Federation. "This strategy has strong position in basic chemical manufacturing, and here Britain could benefit if, thanks to the North Sea, the emphasis in new ethylene manufacturing swings from the Rhine to Scotland and Northern England. It can be argued that Germany is also closer than Britain to the major consuming markets.

Furthermore, there has been a reluctance by some U.K. manufacturers to replace more "traditional" materials with plastics. After all, it is estimated that 80 per cent of plastics goes to other industries, with 20 per cent going direct to the general public.

Comparative studies have shown a much greater volume of use of plastics for foreign produced products such as cars and electrical products. The big rise in oil prices in 1973 and 1974 prompted many potential plastics users to review their purchasing requirements. They were right to question whether oil-based plastics supplies could be assured and whether plastics would become uncompetitive against timber, steel, paper and

Ray Dafter

Fibre producers

CONTINUED FROM PREVIOUS PAGE

conditions. Akzo has cut back on surplus capacity in Benelux and Germany and has recently announced a more complete merger of its Enka-Glanzstoff combine with headquarters control in future to be located at Wuppertal in West Germany. With this move the company hopes to return to profit in 1978 in fibres. The company is also integrating more closely the activities of two subsidiaries, British Enkalon and La Seda of Barcelona.

ICI announced in 1975 a major cost-cutting programme aimed at producing 30 per cent more with 30 per cent fewer workers, and followed this up at the end of last year with a further pruning of about 500 monthly-paid staff jobs. Similar moves have either been taken by Europe's other leading fibre groups or are now being faced, though the Italians have proved reluctant to contribute to the cutbacks. Though Montedison, the Italian State producer, has the longest history and the biggest accumulation of losses, other producers in Italy, backed with Government grants, are going ahead with plans for major expansion of capacity leading possibly to an overall increase of some 200,000 tonnes a year by 1980.

Fibre company executives are now prepared to admit that some of the problems of the past few years have been caused by failure to react spontaneously enough not only to changing trade circumstances but to public demand as well. "The industry was slow to react to the problems of reduced growth rates in Western European economies, decline in gross national product, over capacity in all fibres, and the technical obsolescence of certain products and processes. It has suffered as well with the swing in fashion to the natural look and handle." Mr. Ken Hollows, a Monsanto UK director, pointed out recently.

The crisis programmes adopted by the big companies have, as a result included not only cuts in production and staff but renewed attempts to improve fibre aesthetics, and the appeal of man-made fibres. ICI has dropped its "Terylene" trademark—once a synonym for all the members of the exclusive "polyester" club but for some stuck in the public mind as an outdated fabric. Instead it is now promoting the original Terylene name in a number of variants. British Enkalon has been putting much of its promotional effort behind a new fine denier polyester, Golden Touch, in a bid to get away from the commodity polyester filament market.

Strength

On the Continent, too, most of the producers had been seeking to revitalise their ranges. Bayer has pulled out of textile denier nylon, including textured sockery yarn, and is hoping to build on its acrylic strength with a new absorbent acrylic fibre, though very little of it has yet been seen. This development has been matched by Courtaulds' development of a high absorbency viscose fibre which is now selling strongly, particularly to the household textile producers. In the U.S., a number of smaller producers attempted to enter fibre production by the early 1970s boom in

polyester filament have now withdrawn. But while the catalogue of events in recent years is almost uniformly gloomy, the producers themselves see reasonable prospects ahead for those companies that succeed in putting their house in order—always providing more stable market conditions follow the MFA talks. For although man-made fibres have suffered in recent years from the return of favour of natural fibres, the laws of supply and demand make it likely that polyester, now the biggest of the man-made fibres, will overhaul cotton, probably in the mid-1980s, the most widely used fibre of all.

Availability

The factors working in favour of polyester are its availability, with more than 200 plants in more than 60 countries already in operation, and its price advantage. Whereas in 1960 polyester was three times as expensive as cotton in the U.S., the gap has narrowed as polyester production has increased, to the extent that at present in the U.S. polyester is not much more than two-thirds the cotton price.

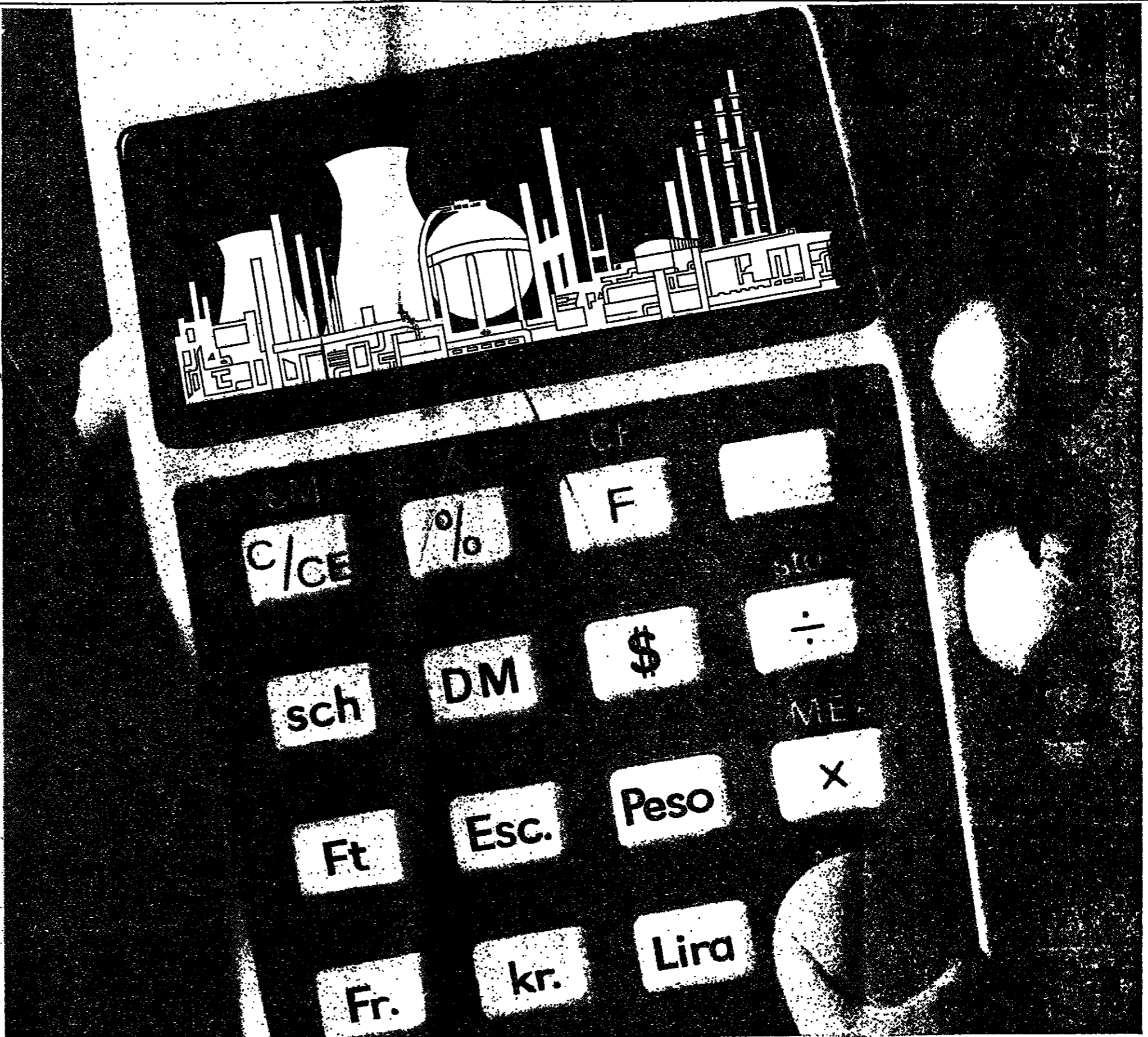
The present price differential between polyester and cotton is unlikely to be reversed on any permanent basis. Dr. Brian Smith, the chairman of ICI Fibres pointed out recently. "Rising prices for oil and energy will force polyester prices upwards but the pressures on cotton and wool will also become more intense due to constraints on their availability, and the probability is that the future will see a continuation and widening of existing differentials," he said.

Polyester's world volume, according to Dr. Smith, could reach 6m. tonnes by 1980, when it will account for 20 per cent of total world fibre production, with the present rate of output doubling in the mid-1980s. The two other main fibres—nylon and acrylic—are likely to grow more slowly and will probably go increasingly into more specialised outlets, acrylic in home furnishings and knitwear, and nylon finding its biggest market in carpets.

The bulk of the increase in production required to satisfy growing world demand is likely to take place outside the traditional centres of manufacture—the U.S., Europe and Japan—with new fibre capacity following the spread of textile and clothing manufacture to the developing countries and the Comecon bloc. Whereas 90 per cent of polyester production was located in the three main industrialised areas of the world 10 years ago, the proportion is expected to be around two-thirds within the next decade.

It is a development which gives added point to the pressures now being brought by the fibre producers for changes in the MFA. For one consequence of the build-up in fibre production around the world is that it will not be possible for the European fibre producers simply to switch to overseas markets to compensate for the decline in the domestic textile and clothing industries. Fibre production is clearly in future going to be only for the biggest and bravest.

Rhys David



A talent and a readiness to earn for Britain

Calculated in any currency, our exports of chemicals and plastics currently running at the rate of well over half a million tonnes a year are a valuable contribution to Britain's economy.

Our annual exports to Europe alone are earning nearly £100,000,000.

But without heavy investment we cannot compete in world markets. During 1976 our capital investment represented £5,000 for each one of the

10,000 men and women in BP Chemicals. It is planned to sustain investment at even higher levels in the years ahead.

Work in hand includes major expansion in olefins, acetic acid, benzene, high density polyethylene and chlorine, all vital raw materials which alone represent an investment of £200 million.

Our investment, our people and their talent are working for Britain's prosperity now and for the future.



BP chemicals

BP Chemicals Limited, Devonshire House, Mayfair Place, Piccadilly, London W1X 6AY

THE CHEMICAL INDUSTRY VIII

The major customer for process plant

THE U.K. CHEMICAL industry has been buying between £100m. and £130m. of process plant a year (at 1970 prices) during the past five years and therefore represented for most of that time the process plant manufacturers' major customer.

Relationships between the process plant makers and their chemical industry customers have not always been of the best. There seems to have been a mutual lack of confidence.

For examples of the plain speaking which has been a feature of past months there is no need to look further than the recent annual dinner of the Process Plant Association.

"It would appear that the availability of equipment in this country has been narrowing steadily over the past ten years and there is no indication that this trend is halting beyond the point of sensible rationalisation," declared Mr. Malpas.

Trend

"Furthermore, over the past six months significantly better price and delivery has led us (ICI) to place orders on the Continent. Even so I expect that in 1977 we shall still show that we have placed well over 80 per cent. of our orders in this country.

"But the narrowing range of equipment available and its declining competitiveness is a major concern to us. The trend is not just a phenomenon of this year, it has been gathering momentum for some time. Maybe it is just sensible rationalisation, perhaps, but it looks more ominous than that."

Mr. Malpas went on to complain that he had attempted to

obtain forecasts "of your plans and aspirations but so far my attempts to obtain these have not been very fruitful."

He asked: "Is the trend of your industries one of rationalisation? If so, what is the end point? Which market sectors will you go for, which will you leave to others?"

These remarks prompted some activity after the event as the plant makers did not agree with some of the important points. It is certainly true that rationalisation in the process plant "hardware" field has been taking place and seems likely to continue to be a feature for the next few years.

Companies have merged, companies have dropped products from the ranges they offer.

The industry seems to have shaken itself down to a position where there are about ten very big companies and a large number of small specialist suppliers.

In the middle is a very much decreased number of medium-sized companies. It is these companies which appear to have most difficulty in getting the orders to fill capacity. So it seems reasonable to assume that it is among these companies that the future changes will take place.

In the talks which followed

the PPA's annual dinner, Mr. Malpas was taken to task for suggesting that individual items of equipment costing over £1m. were not available in the U.K. What he had particularly in mind were very large pressure vessels and the PPA pointed out that there are, in fact, two U.K. companies which can supply these vessels.

But the association also stressed this was an international business and highly competitive—it estimates that demand for such large and expensive vessels is only one eighth of capacity.

The association also pointed out that 92 per cent. of all vessels produced each year are made with walls under one inch thick—which shows that the volume demand is for the lower-cost vessels—and that in the supply of these U.K. manufacturers are competing with all foreign makers with the possible exception of the Japanese.

The positive results of Mr. Malpas's outburst, however, were many. ICI's central purchasing manager met with the PPA members and a number of potential problems were discussed and some misconceptions put right. This was an important step because, as Mr. Malpas pointed out, ICI is a great sup-

porter of U.K. suppliers.

Its capital investment in the U.K. was over £230m. in the bad year of 1975, about £270m. in 1976 and will be even more this year. Some 85 to 90 per cent. of the engineering equipment involved—pipes, valves, pressure vessels, machinery, instrumentation and so on—was and is being purchased in the U.K.

In addition, the group buys substantially from the U.K. suppliers for its projects outside the U.K. The dinner at which Mr. Malpas made his remarks also provided some evidence about the way the process plant makers are somewhat disgruntled about their relationships with customers. Mr. John Laitthwaite, the then chairman of the PPA, insisted "I think we have in the past been much too kind to them (the customers)".

Deliveries

He revealed that the association had carried out a survey which showed that from 1975 to 1976 total late deliveries fell from 13.7 per cent. to 8.7 per cent. and that the percentage of those late deliveries due to the plant makers fell from 23 to 18 per cent. But those due

to customers' changes of design, delays in approval and so on rose from 26 to 28 per cent. One plant maker alone during 1975 found he had to issue around 10,000 extra prints to shops and customers to cover subsequent modifications.

Mr. Laitthwaite declared: "I think we must be tougher in future and I believe the customer would prefer us to be. The imposition of a rigid discipline in the progressing stages of the contract and recognition of the effects of change or delay in terms of time and money passed quickly to the customer would, I believe, throttle many alterations at birth and at least would allow us to get a fairer return for our work."

"Many of us think that if we accept everything thrown at us in one contract we will be better placed to get the next one. I believe this is not so. The customer will look at each project separately and all he will remember of the last one is: 'Was it on time?'"

Behind Mr. Laitthwaite's remarks was the recognition that the problem for the plant maker is that a delay in one project can hold up work on several others if he allows it to do so. A tougher approach by the plant manufacturers, an in-

stance that changes by the customer put a project to the back of the queue and lengthen the delivery time and that the customer pays for the extra work involved, would surely convince many customers to change their minds again and stick to the original plans.

Discussions

Discussions between the chemical industry customers and the process plant makers are about this and other mutual problems now take place on a regular basis at a committee set up about nine months ago by the Chemical Industries Association, a committee which includes two invited members from the PPA.

The fact that the Process Plant Working Party at the National Economic Development Office is soon to be upgraded into a fully-fledged "Little Neddy" should also contribute to a better understanding between the plant makers and the chemical industry.

The working party has for the past ten years or so published a forecast of investment in process plant based on the investment plans of the U.K. process industries. This year's full report is to be published in July.

However, a summary recently issued in advance of the full report, concluded that investment in the chemical industry should increase by 17 per cent. in 1977 and there should be further growth in 1978. Expenditure on "hardware," or the plant itself, is forecast to rise from £130m. last year to £152m. in 1977, to move up again to £166m. in 1978 and to slightly more—£168m.—the following year (all at 1970 prices).

There is also the hope that total investment by the chemical industry may be higher than this forecast if a number of large projects which are currently uncertain actually go ahead and if the U.K. is successful in attracting investment from abroad.

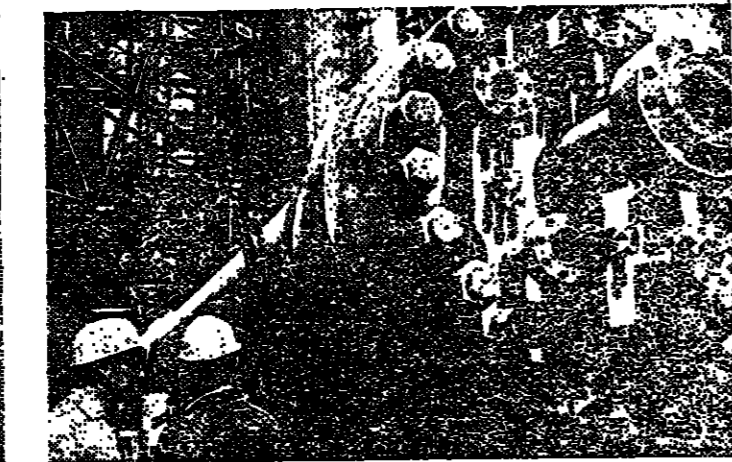
Kenneth Gooding

Leadership in technology depends more on people than on machines

From a report by Dr. M. Appl of the BASF Ammonia Department.



Without ammonia synthesis, it would no longer be possible to meet the world's demand for fertilizers. This method of producing ammonia on an industrial scale was first developed by BASF. In the last twenty years, it has undergone hectic growth, which is of enormous significance for the



world's food supply. Such progress would never have been possible without the development of high-pressure techniques, a field which BASF have pioneered from the very beginning. BASF's high-pressure techniques also played an essential part in many other major processes

requiring pressures as high as 3200 bar (atmos.). Today, the demands imposed by the need to optimise energy consumption and preserve complete safety are even more severe. It is to these aspects that BASF process engineering is devoting its attention at present.

In the field of advanced technology there is only one way to keep ahead: by employing the best brains.

Brains are people; and BASF have achieved their position as leaders in the chemical industry by treating people as first in importance. As a result, BASF now employ over 10,000 people in research many of them distinguished scholars in their fields.

BASF put people first. Not only people at the frontiers of technology but the people who buy and use BASF products. People in industry who use our dyes and printing inks and dispersions, adhesives and plastics and intermediates. And you, the people whose lives are touched and affected by BASF products at every point. Human benefit is the main criterion by which all the research, the technology, and the products are finally judged.

Pollution control

THE COMPETITIVENESS of the British chemical industry and that of its European counterparts remains closely linked in the matter of anti-pollution measures to the policies of individual governments.

Although it is hard to measure the cost of pollution control already carried out, due to its integration within modern plant design and the possible savings which may arise from the measures, it is clear that great stringency within any one country can be damaging.

Discussions in Brussels on the question of uniform standards within European Economic Community countries have so far failed to produce any satisfactory results. This problem has been well illustrated by the dispute, basically between Britain and Italy, over titanium dioxide waste.

Italy, supported by France, has been strongly in favour of the introduction of uniform standards. Pressure for this has come from Montedison, which claims that its plant at Scarlino in Sardinia may be forced out of business because it is the only one of its type carrying out adequate anti-pollution measures.

It claims that as a result of this the operation has been carried out at losses amounting to L35m. in four and a half years. As a result, Italy and France have been pursuing a policy of "equal hardship" under which Britain would have to conform with a uniform standard.

It has been pointed out by Britain, however, that the U.K. titanium oxide industry's effluent, which has in the past been released into the Rumber estuary and off the north east coast, has not created the same political reaction as in the Mediterranean.

An advantage which the British Government has in this dispute is that the Community has accepted a precedent-setting practice in the U.K. on the control of "black list" pollutants (mainly heavy metals) from land-based sources into European waters. Here the U.K. was allowed to differ in controlling the release of these pollutants by using the duality standards system.

Advantages

However, the geographic advantages enjoyed by Britain in this respect are unlikely to provide a loophole indefinitely, and although the imposition of uniform standards is proving difficult, there are likely to be side-offs in future which will force Britain into a greater degree of conformity.

British policy on pollution is well described in the most recent report of the Health and Safety Executive's Air Pollution Committee on industrial air pollution, which is important to us, but it is not at the top of the list of priorities while the country is struggling to earn its bread and butter. It was suggested that due to good relations with industry, much had nevertheless been achieved in industrial air pollution control.

Policy depends largely on achieving gains by the best practical means, a phrase which has become widely accepted in other countries including the U.S. However, it was pointed out in a paper published in the report that the principle had been misunderstood in recent years.

Critical comparisons had been made, both in Britain and internationally, with control methods stemming from the prior adoption of legally based air quality standards, and also with the controls used in the fields of toxic waste disposal and of water pollution.

In the latter it had been argued that if legal quantitative restrictions could be imposed upon solid wastes and liquid effluents, it was asked why similar controls could not be placed on discharges into the atmosphere.

Distinction

It was suggested in the report that this argument overlooked an important practical distinction; solid wastes could be accumulated, analysed and considered over a sensible period of time before authorising for disposal. Liquid effluents could, though to a lesser extent, be stored in delay tanks and discharged in controllable amounts.

Discharges into the air were not so readily restrained and, for example, the largest town gasholder yet built in the U.K. would only store one day's flue gas discharge from a small boiler burning half a ton of coal per hour. The principles of the pollution control adopted should therefore take this instantaneous aspect into account, and be adaptable and flexible enough to cope with the abnormalities and variations which are often encountered in the process industries.

It is also pointed out that the Alkali Act gives the power to the chief inspector of the Inspectorate to meet this situation by stipulating the means that shall be used to control the process and treat the gases produced. Thus the presumptive limits for emissions arise from the control technology and not normally from external considerations.

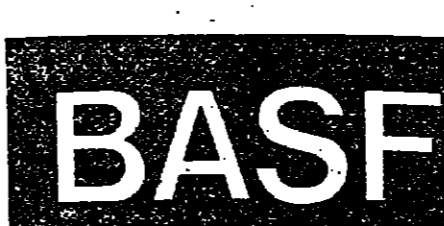
On the other hand, an alternative control strategy starts from a declared air quality standard and then by complex mathematical modelling seeks to determine a suitable mass emission limit for each individual source in the vicinity, such that the overall ground level concentration contributed from all sources is within the standard. The mass emission limit is thus justified by reference to the legal basis of the standard rather than to the best practicable control technology.

The United Kingdom has not accepted this air quality standard approach to emission control, believing that there is not yet sufficient medical and scientific knowledge to justify the setting of standards which would have such far-reaching consequences. Nor has it yet shown that the mathematical modelling is sufficiently powerful to provide for the typical range of weather conditions and surface topography that are found in the real situation.

Despite this great difference between these two control strategies, which are perhaps best typified in the U.K. and the United States, the situation is not as stark as it might seem. The report suggests that the systems will tend to converge rather than diverge, and the best future control systems will be obtained by choosing wisely the best practices from present alternatives rather than by theoretical extension in isolation.

Lorne Barling

BASF are the people concerned



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

THE CHEMICAL INDUSTRY IX

Agrochemicals back in surplus

HELD DOWN by price restraint, restricted by the encroachment of international legislation and scorched by freak weather conditions, the agrochemicals industry now appears to be heading for a period of comparative stability. For an industry that had become accustomed to a traditional pattern of fairly settled growth, agrochemicals has been confronted over the last four years with serious challenges as it has gone through a complete cycle from steady expansion to shortage and now back again to surplus.

Last year the industry's turnover increased only slightly—by less than 2 per cent after allowing for inflation. But a brief examination of the performance of the various sectors demonstrates how greatly the fortunes of the industry are influenced by the vagaries of the weather.

Herbicides dominate both the domestic and overseas markets and it is in this area that the U.K. industry has traditionally shown its best performance in terms of innovating new products. There are about 600 agrochemicals in registered use around the world but the U.K. market makes use of less than 200 of these, the climate usually ensuring that there is a relatively small call on insecticides and fungicides.

Last year, however, the period of prolonged drought created an extremely difficult season both in the U.K. and Europe, giving rise to widespread insect pest attacks throughout the summer of continuous high temperatures.

Inflation

The result of such very dry weather was to push up the value of domestic insecticide sales by 42 per cent—even after taking into account an inflation factor of 16 per cent—while export sales in this sector rose by no less than 74 per cent. The overall pesticide market is now worth in excess of £190m., an increase of some 18 per cent in value terms over 1975 when sales of pesticides at home and abroad totalled some £160.6m.

But despite the flurry of activity in insecticides last year it is in weed-killers that the U.K. agrochemical industry has its continuing strength. Herbicides now account for 66.5 per cent of total sales and last year they aggregated home sales of £80.1m. Exports reached a plateau in value terms at £66.4m., although volumes slipped back.

The industry's settled pattern of expansion was first upset by the oil price increases imposed by the OPEC countries which, as they fed through the system, caused a shortage of chemicals in several sectors. The shortages

were made worse by some panic buying and led to exceptionally high demand in 1975. The agrochemical industry is highly seasonal, and some of its products can only be used during a very restricted period of the year. This can create problems of supply at times of unusually high demand.

Much of the extra demand appeared, however, to have gone into stock-piling, which, combined with the drought which made the use of many herbicides superfluous, was reflected in lower demand last year. The British Agrochemicals Association

INDUSTRY PERFORMANCE—PESTICIDE SALES 1974-76

	1974	1975	1976
	£m.	£m.	£m.
U.K. sales of herbicides	40.2	50.8	60.1
Export sales of herbicides	46.4	65.1	65.4
U.K. sales of fungicides	7.97	8.12	9.81
Export sales of fungicides	0.4	3.1	5.5
U.K. sales of insecticides	9.38	10.42	15.04
Export sales of insecticides	9.9	10.2	19.1
U.K. total sales	64.5	72.2	94.6
Export total sales	56.7	81.4	93.7
Total industry sales	121.2	153.6	188.3

Source: British Agrochemicals Association.

tion now feels that these severe fluctuations in demand have worked through the system and that this year a steadier demand pattern will emerge.

The industry believes that the real progress in exports achieved between 1974 and 1976 is a more realistic pattern to consider than either the steep rise between 1974 and 1975 or the decline between 1975 and 1976, which it holds to be strictly short-term.

Held back by herbicides the overall export performance improved by 15 per cent last year from £81.4m. to £93.7m., but this was no real gain after allowing for inflation. In the smaller market sectors however, pesticides performed well because of the dry weather, and fungicide exports have expanded greatly from a small base. Three years ago fungicide sales abroad totalled only £9.4m., but last year this sector reached a peak of £5.5m., which appears to have resulted from the even more widespread adoption of cereal fungicide programmes in European agriculture.

The emerging pattern of the industry's investment programme illustrates sharply its rather slow growth pattern and the slightly ambivalent stance it is adopting towards the growing wave of legislation and regulations that are issuing forth from both national governments and international bodies. An increasing portion of research and development expenditure is being taken up by activities geared towards maintaining existing products in their traditional markets.

It is now argued by the industry that the increasing burden of standards legislation is slowing the entry of new

chemicals on to the market. During the last five years it is estimated that the time taken to get a new product from the point of discovery and the issuing of a patent, through its trial clearance, provisional clearance and finally full commercial clearance and thence on to the market has been lengthened by some two years.

To bring a product on to the market from scratch is now taking a research and development programme stretching over seven to ten years, whereas as little as five years ago the process was estimated to last five

to seven years. Equally, the research costs have escalated to the point where the industry is reckoning on an expenditure of £4m. to £6m. per successful product. Whether or not it is yet the case that costs alone are holding up product development is still to be proved, but it is certainly the case in the U.S. that the number of new products registered in the last two years has dropped as a result of problems with the federal regulatory authority, the Environmental Protection Agency.

The industry has not been slow to point out the dangers it is facing. Mr. J. A. Smith, the agrochemicals manager of Shell International Chemicals, has underlined the fact that government regulation in the pesticide industry is exacerbating the cost problems that were already making it an unattractive area in which to invest. Research and development is steadily involving companies in taking greater and greater risks over longer timescales and this has caused the chemical industry in some cases to transfer resources to other more profitable areas.

According to Mr. Smith, product innovation is now being conducted by only a handful of companies and even that number is set to decline further. "A significant reason for this is the growth and complexity of the information required by the various authorities, particularly from the toxicological and environmental aspects, before a product can be registered for commercial use."

Alongside this process prices have not been keeping up with investment and operating costs, and although those for some products may have risen by as

much as 50 per cent, in the last three years the manufacturing costs may well have increased by more than twice as much.

Under such conditions it is difficult, says Mr. Smith, to see how the investment incentive can be maintained. This concern over justifying investments is reflected in the way Shell International Chemical planned its £19m. investment in a multi-product agrochemicals plant in Rotterdam. To have built a plant solely for the production of a restricted range of products would have been considerably cheaper, but Shell is hoping that the built-in flexibility will allow a rapid switching to the production of other chemicals, thus shortening somewhat the long lead times for bringing new products on to the market.

Other more extreme warnings have come in the past from Dow Chemical which has run into particular problems in the regulatory field in the U.S. Dr. C. A. I. Goring has said that some companies "have already jumped ship; others will follow. The ones that survive could eventually doem it prudent to get out of the business if regulation becomes too extreme."

According to Dow, when the Federal Insecticide, Fungicide and Rodenticide Act was introduced in the U.S. it was estimated to have cost the company an additional \$7m. in costs and \$17m. in lost sales. Like the pharmaceuticals industry, agrochemicals has of course come under fire from many quarters for its failure on occasions to afford sufficient protection either to individuals or the environment against the toxic properties of some of its products. Some critics have accused it of paying too little attention to the possible harmful effects of its products on the people who are applying them on the farms.

Dangers

Writing for the Landworker, the magazine of the National Union of Agricultural and Allied Workers, Dr. Richard Clutterbuck, a lecturer at the North East London Polytechnic, said: "Piles of scientific papers have been produced on the effects on pigeons, partridges or penguins in the Arctic. But now it is becoming apparent that the main dangers are to those who are first exposed—the workers who produce and use the chemicals."

He cited complaints ranging from ulcers, indigestion and eczema to impotence that had arisen after the use of certain chemicals in intensive agriculture, and was scathing about the degree to which the onus lies on the worker to ensure that he does not become contaminated. He attacked the industry stance that no chemical is too toxic to use provided that the proper precautions are taken and that any operation is safe if it is adequately planned, for ignoring the reality of the way jobs are carried out.

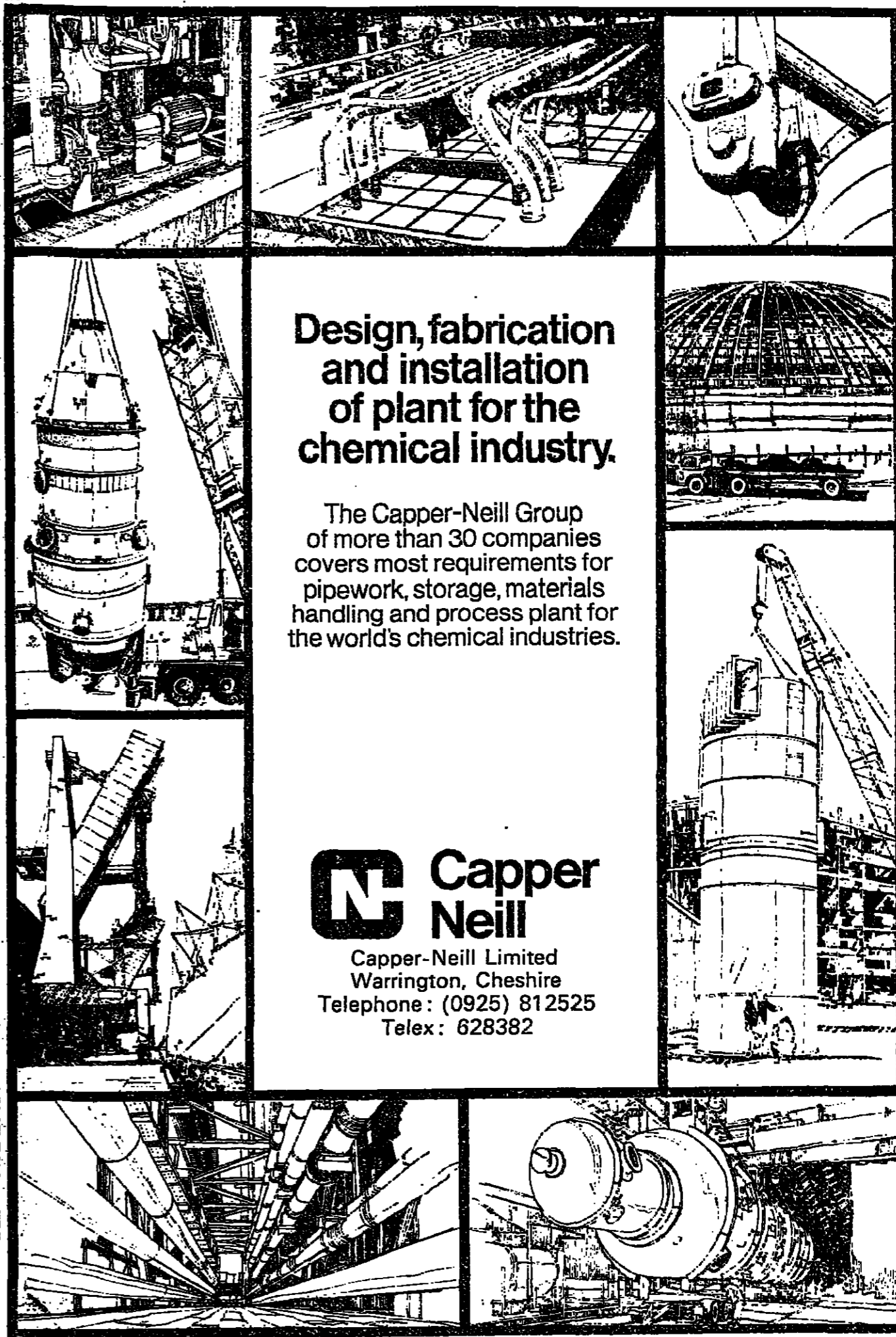
The pressure of the introduction of various types of safety legislation is hardly likely to abate, but the industry appears keen and ready to soften its impact as far as possible by ensuring ever higher standards of self-regulation. It is currently being consulted—as is the chemical industry as a whole—on the latest plans of the Health and Safety Commission for a scheme covering the mandatory notification of the toxic properties of all new substances that are to be introduced for use at work.

However, for the industry the cumulative effects of such legislation are clear. Dow, for instance, estimated that last year only 34 per cent of its pesticide research and development expenditure was spent on discovery research, while 66 per cent went on product registration and development. This compared with a ratio spent on discovery research of 53 per cent in 1970, 48 per cent in 1971, 45 per cent in 1972, 42 per cent in 1973, 39 per cent in 1974 and 38 per cent in 1975.

But as the demands of agriculture for greater productivity grow, much of the industry's opportunities for growth will come in the more intensive use of agrochemicals. As much as 85 per cent of all cereal crops in the U.K., for instance, are already sprayed at least once, but opportunities are opening up as farmers become increasingly aware of how the multiple use of pesticides can help safeguard the profitability of their crops.

Alongside the more intensive use of agrochemicals, the industry is seeking to make products more selective in their effects—by trying to ensure, for instance, that particular insecticides can kill aphids such as greenfly and blackfly while leaving ladybirds, which carry out a similar task, unscathed.

K.D.



Design, fabrication and installation of plant for the chemical industry.

The Capper-Neill Group of more than 30 companies covers most requirements for pipework, storage, materials handling and process plant for the world's chemical industries.



Capper-Neill Limited
Warrington, Cheshire
Telephone: (0925) 812525
Telex: 628382



INTERNATIONAL CONTRACTORS FOR CHEMICAL, PETROCHEMICAL, OIL, GAS AND PROCESS PLANTS

CJB carries out complete projects internationally for the oil, gas, chemical, petrochemical and process industries. It provides design, engineering, construction, commissioning and project management services and can arrange financial facilities, product marketing and other commercial services to meet the particular requirements of the client. Current contracts include two high density polyethylene plants for the USSR each to provide 200,000 t.p.a. to the Union Carbide gas phase

process; a low density polyethylene plant and site supports at Antwerp for Union Carbide Belgium; processing facilities for BP Trading Ltd. at the Sullum Voe crude oil terminal, which include stabilisation of crude oil from the Ninian field and gas compression, fractionation, cool-down and storage for the Ninian and Brent fields in the North Sea; an extension to the 50,000 tonnes per year polyester complex at Mogilev, USSR, completed by CJB in 1973; and a pipeline system in the USSR to transport 240,000 tonnes per

annum of ethylene across 850 km. A high density polyethylene plant in Czechoslovakia shown below, came on stream in January 1977. CJB Offshore Ltd., a subsidiary company, is one of the leading international contractors working in the offshore industry. The Thistle Field structure, recently positioned in the North Sea, was the first complete platform engineered by CJB, who entrusted the structural design to its associate company, CJB-Earl & Wright.

CJB takes total project responsibility, and complete design can be undertaken for:

- Polymers and Plastics
- Oil/Gas Production, Processing & Transportation
- Synthetic Fibres
- Petrochemicals
- Agro-chemicals
- Fine Chemicals
- Inorganic Chemicals
- Bio-chemicals

Food Industry
Mineral Processing

ALSO:
Pipeline Design and Management for gases, liquids, slurries.

Storage and Bulk Handling Installations.

Utility and Support Systems for integrated plants, including total power systems.

Effluent Treatment Systems.



For further information contact:
A. C. LEWIS



CONSTRUCTORS JOHN BROWN LIMITED

CJB House, 20 Eastbourne Terrace, London W2 6LE
Telephone: 01-262 8080 Telex: 263521 Cables: CIVANIC London W2
A member of the John Brown Group of engineering companies

As Chairman to the board, I thought I would trot off to Lords to watch England v Australia, and why not! now that Matthew Hall are taking care of my design and engineering problems for chemical plant.

Matthew Hall Engineering Limited
Matthew Hall House, 191 192 Tottenham Court Road
London W1A 1BT Telephone: 01-536 5675 Telex: 29784
Also: USA, AUSTRALIA, NETHERLANDS, BELGIUM



Offering a complete engineering service to Energy On and Offshore, Petrochemical, Chemical and the Process Industries.

Dyestuffs and pigments

WHATEVER THE economic fortunes of the U.K. and European chemical industry. In recent years may have been — Britain, ICI's main export, earning most events appear to have had a distinctly gloomy tinge to them — in other respects the world has become a much brighter place to live in. The colours of fabrics which we all wear have become richer and livelier, and a variety of other objects from houses and cars to factory buildings and park railings have acquired a more colourful exterior. But while the aim of improving spirits may be subconsciously there, the most important factor is without doubt the significant advances which have occurred in an unheralded part of the chemical industry — dyestuffs and pigments.

It is a sector which produces relatively low tonnages compared with petrochemicals, for example, but which nevertheless plays a significant part in the

in recent years, as production has moved to other centres, investment in dyestuff manufacture has continued.

Plant

In the U.K., ICI is currently nearing completion of a new £17m plant which will manufacture H-Acid, an important dyestuff intermediate. The plant will have an output of 4,000 tonnes a year, half of which will be taken by ACNA for its own dyestuffs needs. Earlier this year ICI also announced plans to spend £15m on major expansion of its highly successful H-Acid-based Procion fibre re-active dyes for cotton-type fabrics at Grangemouth, and a major new plant producing Azo dyes for man-made fibres has been brought on stream at Huddersfield.

dyestuffs producer in the U.K. is engaged in a £20m expansion of capacity at its Clayton Aniline plant in Manchester, and other smaller U.K. chemical concerns have also been stepping up their investment. Yorkshire Chemical has recently opened a £3.5m extension to its Azo dye facilities at Leeds and is planning a further £2m investment programme this year including £500,000 on new dye-making facilities.

Britain has become a relatively attractive place for dyestuffs manufacture partly because in an industry where the leading producers are all major exporters it can be classed as a relatively low-cost production area, with a highly competitive currency. Furthermore, while textiles manufacture has spread around the world, it is somewhat less easy for new producers to enter dyestuffs produc-

tion. The intermediate plants which provide the chemicals used in dyestuffs production have to be of world scale to be economic and require large sums of money such as only the major world chemical producers have at their disposal. This trend, which is expected to continue, is making it difficult even for some of the major chemical companies, to finance expansion and more joint schemes such as the ICI-Montedison H-Acid project seem likely to be the pattern for the future.

Recent investment decisions also reflect the considerable technological changes which have taken place in dyestuffs manufacture, enabling significant improvements to take place in the quality and appearance of dyed goods. ICI achieved a significant breakthrough in the 1950s with the development of Procion fibre reactive dyes which become physically part of the fibre, and it has been the company's world lead in this area—featured in the British Genius exhibition in London—which has enabled it to consolidate and strengthen its position among the top six world producers. With other producers also subsequently moving into fibre-reactive dyes, ICI is backing this system to become the principal method used in dyeing cellulosic fibres such as cotton—owing in the process older classes of dye, some of which encounter environmental objections.

ICI, which claims to supply at least 25 per cent of world consumption of fibre-reactive dyes, has further strengthened its position with the development of a package of fibre-reactive and Azo disperse dyes, capable of printing polyester-cotton mixtures to standards not previously obtainable. Another breakthrough in this area, based on improvements in the polyester part of the package is thought likely to be ready for launching next year.

The pattern of development is likely to consist of continuing improvements of this nature to downstream products and processes—in particular the application of dyestuffs—rather than fundamental changes in the chemical or physical basis of dyestuffs. To this extent dyestuffs have reached a state of maturity much as have fibres,

DYESTUFF AND PIGMENT SALES BY U.K.

MANUFACTURERS		
Dyestuffs (000 kg.)	43.2	52.4
(£m.)	109.8	154.4
Organic pigments (000 kg.)	11.8	16.7
(£m.)	33.0	51.0
Inorganic pigments (000 kg.)	16.4	22.4
(£m.)	13.3	23.0
Ochres (000 kg.)	17.0	23.3
(£m.)	1.7	2.8
Titanium dioxide (000 kg.)	157.7	197.8
(£m.)	229.1	334.2
Total (000 kg.)	229.1	334.2
(£m.)	229.1	334.2

Source: Business Monitor.

EXPORTS AND IMPORTS		
Exports (000 kg.)	1975	1976
(£m.)	157	165
Imports (000 kg.)	53.2	77.5

Source: Overseas Trade Statistics.

ACNA, with Sun Chemical in the U.S. and several Japanese companies also significant. There are also important if somewhat smaller scale producers throughout Europe—Burrell in the U.K., Capel in France and Belgium, Koge in Denmark, Sandos in Switzerland, and Bayer in West Germany.

The industry's outlets cover a broader field than dyestuffs, with the main volumes going into printing ink for magazines and newspapers, decorative and industrial paints, including in particular the motor industry, textile printing, packaging, plastics and paper coloration and wall paper.

It is a cross-section which has had its advantages over the past few years, with some sectors such as industrial paint holding up well at a time when demand for other pigments has fallen away as a result of recession. Some recovery in demand is now being seen in other areas, with printing, ink recovering strongly over recent months throughout Europe, as some confidence has returned and advertising budgets have been increased, thus helping to raise newspaper and magazine circulation. Other areas such as textile pigment printing have remained relatively depressed, however.

As in dyestuffs the capital cost of entering the market and sustaining a position within it have escalated in recent years and rationalisation of production and specialisation have followed. Though most of the big producers offer a complete range of pigments, there has been an increasing tendency to concentrate on particular parts of the colour spectrum. ICI, for example, has committed itself heavily to investment in phthalocyanine greens—or Monstral Greens to use its brand name—and has within the past month brought on stream 3,000 tonnes per year plant which doubles its existing capacity and gives it a production unit in this colour area vastly

Rhys David

Fertilisers

CONTINUED FROM PREVIOUS PAGE

tonnes a year is forecast by 1980-81.

The UKF planned investment was aimed at filling this emerging gap. For the moment, with the arrival on stream of a new ICI ammonia plant at Billingham with an annual capacity of some 300,000 tonnes, supply and demand is more or less in balance. The way the fertiliser market has become entrenched in a seeming vicious circle of events also brought the recent cancellation of plans for another ammonia plant. Scania, a joint venture between Norsk Hydro and Supra of Sweden, has also abandoned its proposals for a 350,000 tonnes-a-year plant in Scotland. Plans were first formulated in 1974, but it is unlikely that the plant will ever be built.

For UKF, and any other would-be ammonia producer, the problem is to get a long-term commitment from British Gas. The Corporation, possessing a fuel that is much in demand, wishes to keep its options open and is unwilling to enter into contracts of more than 3 to 5 years duration. As UKF points out, a major investment of some £50m cannot be entered into in such uncertainty. British Gas does not wish to tie its hands again in the manner of the ICI contract. After arbitration the Corporation has lost its fight to renegotiate the contract through the means of a hardship clause and, apparently British Gas has no legal means of obtaining a revision of the price.

On a day-to-day basis UKF's

gas price allows it to break even, but this is no basis for long-term investment. On the other hand it is no part of British Gas' brief, as it stands, to help industry with the supply of gas levels far below the premium fuel price. Following the recent arbitration ICI's hand has been considerably strengthened, but these are long-term solutions which do little to avert the short-term problems.

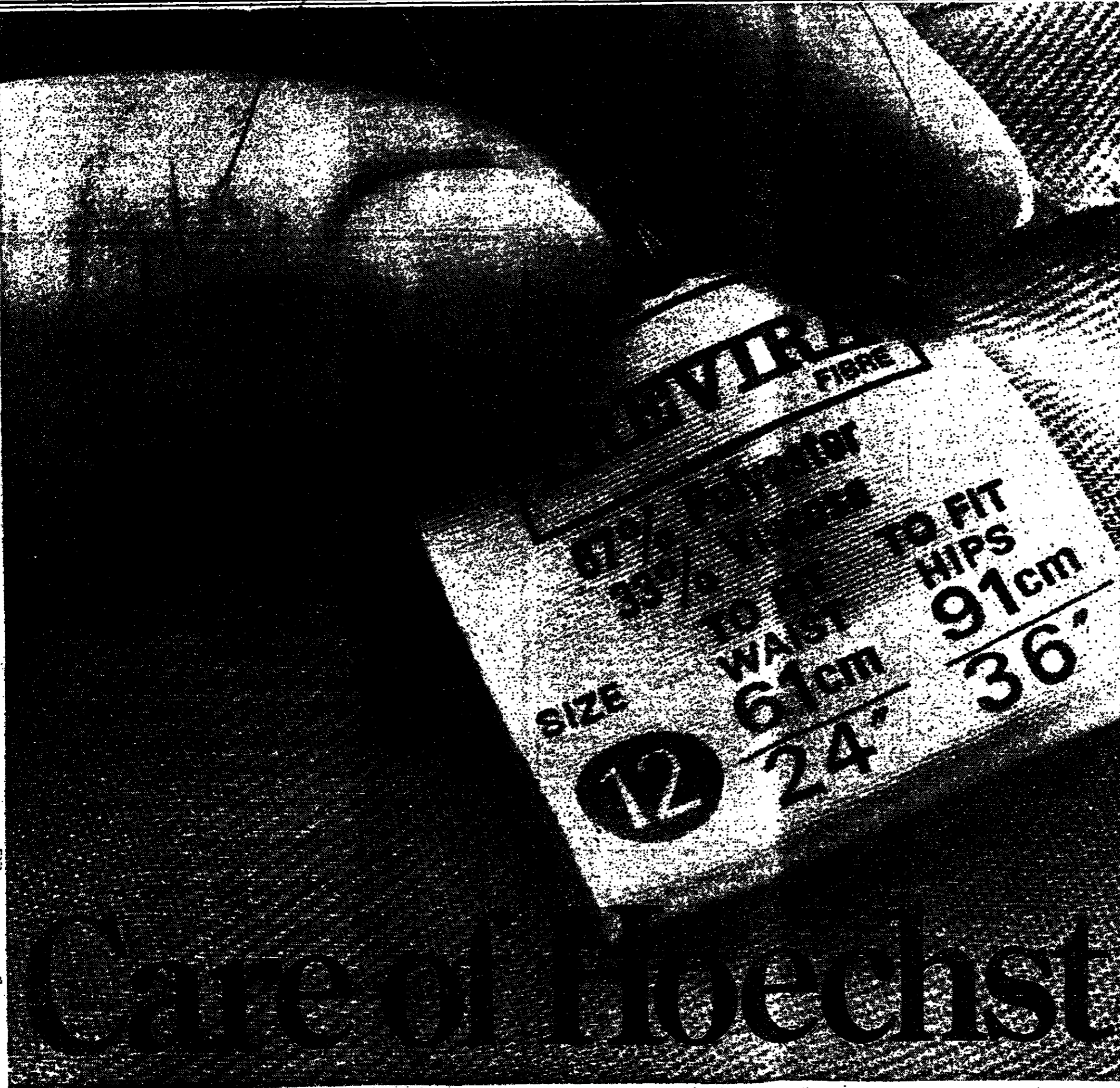
It is ironic that straight nitrogen fertilisers are the growth sector of the market. Last year usage jumped by some 8 per cent, and the major factor that is pushing up demand is that British farmers, who in the past have used less nitrogen per acre than their counterparts in other European countries, have now started to apply larger amounts on grasslands.

The whole fertiliser market is now worth some £350m annually and last year demand almost got back to the previous highest levels of consumption of 1973-74. Total consumption last year was some 1.9m tonnes of plant food, a 6.3 per cent increase on the disastrous year of 1974-75 when consumption fell by 5 per cent, to 1.8m tonnes.

K.D.

EUROPEAN FERTILISER NUTRIENT CONSUMPTION										
1,000 metric tons, nutrient weight										
	U. Kingdom		France		Italy		W. Germany		Netherlands Luxembourg	
Nitrogen (N)	1974-5	1975-6	1974-5	1975-6	1974-5	1975-6	1974-5	1975-6	1974-5	1975-6
Phosphates (P ₂ O ₅)	368	385	1,211	1,654	398	500	877	780	93	85
Potassium (K ₂ O)	371	380	1,413	1,338	270	270	1,121	1,099	113	110

Source: British Sulphur Corp., Statistical Supplement November-December, 1976



Trevira is the man-made fibre that's made quite a name for itself throughout the fashion world.

Not least because of the constant care with which its quality is controlled and its properties are developed to launch new fashion concepts.

And who makes Trevira? Hoechst. It's one of the world's largest companies. Last year it spent over £200 million on research alone.

Hoechst in the UK employs over 8,000 people in laboratories, factories and offices throughout the country.

In 1976, its UK companies had a turnover of about £300 million.

Its products in the UK, apart from fibres, include packaging films, plastics, dyestuffs, industrial and decorative paints, pharmaceuticals, office equipment, hair care products, sunglasses, perfumes.



For more facts, please write: Care of Hoechst, Salisbury Road, Hounslow, Middlesex. Or phone 01-570 7712 ext 3169.

COMPANY NEWS

Minster Assets expects good out-turn

EVERY COMPANY in the Minster Assets group has experienced satisfactory trading during the early months of the present financial year...

The outstanding performance of the year, says Mr. McGibbon, came from Minster Insurance, which recorded a gain of 46 per cent in achieving some £5.3m.

Mr. McGibbon goes on to say that a particularly difficult quarter marred what would otherwise have been a second successive year of more acceptable profitability for British Midland Airways.

BOARD MEETINGS

Table listing board meetings for various companies including William Reed, Sekors International, Shaw and Marvin, Walker and Sons, etc.

J. Foster sees better results

THE RECOVERY in world trade has proved to be much slower than anticipated but John Foster and Soa's U.K. operation should achieve a substantially larger volume of trade and significantly better results in the current year...

shrink or that except at the very top, the finest fabrics will price themselves out.

As reported on May 18, group profits before tax for the 23 weeks ended February 25, 1977 were £408,460 compared with £387,531.

The uplift in profit is the measure of the successful consolidation of the new group, says Mr. Heywood.

Brown Shipley ready for demand revival

IN HIS annual statement, Lord Farnham, the chairman of Brown Shipley Holdings, says that when demand from industry for finance revives it will have an immediate impact.

As 12 months ago, the directors remain concerned that the battle against inflation should be successful.

Other opportunities will undoubtedly arise as economic activity increases both here and abroad, says Lord Farnham.

Holt Lloyd moving ahead

SALES AND PROFITS of Holt Lloyd International, the car care group, are ahead of management's internal budgets for the first quarter of the current year.

The uplift in profit is the measure of the successful consolidation of the new group, says Mr. Heywood.

Federated Insurance in profit

A record growth in premium income, a lower expense ratio, and an overall return to profitability were the main achievements...

Changes at British Dredging

Major management changes have been announced by British Dredging. The new chief executive of the group, whose activities are dredging, building materials and engineering...

Raeburn Trust progress

Gross revenue for the half year to May 31, 1977 of Raeburn Investment Trust advanced from £984,681 to £1,128,905 and after tax of £386,791 (£319,742) etc.

ISSUE NEWS

British Petroleum prospectus

The full prospectus is published today in connection with the Bank of England's offer for sale by the Treasury of 50 per cent of the ordinary £1 stock of the company...

They intend to reserve equal to the difference between the 1977 dividends and through it shortly...

BIDS AND DEALS

Ellerman expands travel interests

Ellerman Lines is expanding its interests in the holiday and travel which, together with business with the purchase for already owned, total one per cent of the Ordinary capital of the company...

SILENTBLOC

Table showing interest rates for various terms: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 months.

FINANCE FOR INDUSTRY TERM DEPOSITS

Table showing interest rates for various terms: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 months.

Notice of Redemption

K-Mart (Australia) Finance Limited 9% Debentures

NOTICE IS HEREBY GIVEN that, pursuant to the provisions of the Indenture dated as of July 1, 1976 (the "Indenture") between K-Mart (Australia) Finance Limited...

Table listing serial numbers of debentures for redemption: 30 2142 4423 6711 9018 11329 13619 16226 20000 22725 26391 27318 28269 31889 34188...

The Redemption Price for the Debentures specified above will become due and payable upon presentation and surrender of such Debentures (together with all coupons)

John Foster & Son Limited Spinners and Manufacturers

Comments by the Chairman, Mr. G. F. B. Grant

- The Group's U.K. operation produced a significantly better profit of £434,589. Direct and indirect export sales account for over 60% of U.K. turnover.

FT share information

The following security has been added to the Share Information Service appearing in the Financial Times:

Transparent Paper Limited

Record results show doubled exports. The accounts show the highest figure of net earnings before tax which the Company has yet achieved, along with record levels of sales and of exports.

Capital Expansion

The programme of capital expenditure has remained active during the past year and with the £1.3 million provided from our own resources during this period the total sum devoted to plant, machinery and buildings during the past four years now amounts to no less than £4.75 million.

BURNETT & HALLAMSHIRE GROUP

Table comparing 1977 and 1976 financial results: Turnover £27,484,000 vs £19,362,000; Profit before tax £2,474,000 vs £1,844,000.

There has been growth on all fronts with each division contributing to increased profits. N. F. SWIFFEN, CHAIRMAN

The BP group and the Stolt-Nielsen group have recently signed a letter of intent, subject to the approval of the Stolt-Nielsen shareholders and the BP Board, which provides for the BP group to advance \$50 million to Stolt Tankers and Terminals (Holdings) S.A. ("STT")...

Refining

The group has 13 wholly-owned refineries, a majority interest in five refineries with 100% processing availability and part ownership of 18 other refineries. Group refineries operated at 70% of nominal capacity during 1976 refining 89 million tonnes compared with 78 million tonnes in 1975.

Table showing Crude oil throughputs at refineries on BP account for 1972, 1973, 1974, 1975, and 1976. Includes regional breakdowns like UK, France, Germany, etc.

Sales and Marketing

In 1976 group sales of crude oil and oil products (including chemicals) amounted to 175 million tonnes. The group markets refined products in Western Europe, Africa, Canada, Australasia and parts of the Middle and Far East...

Table showing BP group sales in million tonnes for 1972, 1973, 1974, 1975, and 1976. Includes sub-tables for Crude oil, Products, and Total products.

Natural Gas

The group's natural gas sales in 1976 amounted to 9.9 million cubic metres per day of which 5.1 million were produced in the North Sea. Proved gas reserves are shown under the heading RESERVES.

United States

By the middle of 1978 it is expected, the BP group's interest in Sohio has increased to over 50%. BP will include the accounts of Sohio in its group accounts. BP believes that in balance sheet terms over 40% of the group's properties and operating assets attributable to BP will then be located in the United States.

BP has special and common stock interests in Sohio which entitle it to voting and dividend rights equivalent to approximately 28% equity stock interest in Sohio.

Increase in production from the Prudhoe Bay Field. BP's interest in Sohio will rise above 50% when the level of crude oil production from Sohio's Prudhoe Bay field reaches 450,000 net barrels per day...

Sohio engages in all phases of the petroleum business in the United States including production of crude oil and natural gas and the transportation, refining and marketing of petroleum products.

For many years Sohio was primarily a refiner and marketer of petroleum products, purchasing most of its crude oil requirements from other US domestic producers. In 1969, however, Sohio acquired from BP, amongst other things, its present interest in the oil and gas leases in the Prudhoe Bay area of the north slope of Alaska...

Sohio Pipe Line Company, a 100% Sohio subsidiary, has a 33.34% undivided interest and BP Pipeline Inc., a 100% BP group subsidiary, has a 15.84% undivided interest in TAPS. The Trans-Alaska pipeline runs approximately 800 miles from Prudhoe Bay to the ice-free port of Valdez on Alaska's southern coast.

The principal market for Prudhoe Bay production will be the West Coast of the USA. Sohio estimates that in late 1977 and in 1978 there will be an availability of crude oil on the West Coast in excess of demand. At a production level of 1.2 million barrels per day the West Coast surplus could be at the higher end of a range of 300,000 to 600,000 barrels per day.

Crude oil prices are controlled in the USA at an average level below world market prices. While the US Government has tentatively proposed that Prudhoe Bay crude oil should be treated at equivalence with world market price levels, no final price regulations have been adopted at this time.

Summarised financial information about Sohio is shown in note 6(iv) and financial information on TAPS in note 6(x) of the Accounts' Report.

Chemicals

The group is a major manufacturer of petrochemicals and plastics with sales amounting to approximately £495 million in 1976. Its principal interests include operations at seven centres in the UK which manufacture and market a wide range of organic chemicals, plastics and raw materials...

Coal

On 1 January 1977 the group purchased a half share in the New South Wales coal mining interests of Universe Tankships Inc., which are operated under the name of Clutha...

New Group Activities

The group is expanding into a number of activities outside its traditional operations. These include coal, the animal nutrition field, minerals and technology related to the group's present activities.

Research

The group's expenditure on research and development in 1976 was approximately £25 million; about 650 professional research scientists and engineers are employed in the United Kingdom.

Current Trading

At BP's Annual General Meeting on 28 April the Chairman referred to three dominant factors on 1977 profits and said "Much will depend on crude oil pricing developments; the two-tier system of pricing introduced on 1 January affects us more severely than the other major oil companies as nine tenths of our OPEC crude comes from 10% price increase sources...

The Chairman also mentioned at the Annual General Meeting that the amount of cash generated by operations in 1975 amounted to £350 million whereas in 1976 it doubled to £700 million.

The group announced its results for the first quarter of 1977 on 2 June. Income before extraordinary items totalled £90.5 million.

The comparable figure for the fourth quarter of last year was £85.9 million and for the first quarter of 1976 was £20.2 million.

Compared with the first quarter of 1976, total sales increased by 0.3 million tonnes, or 0.7%. Within the total, sales of crude oil were down by 8.2% and sales of products and chemicals were higher by 6.3%.

The greatly improved income before taxation (£606.5 million as against £371.9 million for the comparable quarter of 1976) was largely attributable to the continuing build-up from the Forties Field which averaged 378,000 barrels per day in the first quarter and to a substantial appreciation of stock values, following the rise in the cost of crude oil from the OPEC countries from 1 January 1977.

In contrast with the first quarter when product sales were met mainly from stocks, income will be adversely affected (so long as two-tier pricing continues) by the failure to recover from the market the full OPEC cost increases.

The income for the first quarter is not necessarily indicative of the results that will be achieved for the entire year.

The oil industry is highly competitive. There is competition within the industry and also with other industries supplying energy and fuel needs. The operations of the BP group like those of all major international oil companies are from time to time affected by a wide range of political, commercial and other developments...

Information with respect to the probable size of the beneficial effect on net income and group reserves of incorporating the latest proposals from the Accounting Standards Committee of the Institutes of Chartered Accountants in the UK on accounting for deferred tax is shown in note 8 (iii) of the Accounts' Report.

Two-tier pricing. At a meeting held in mid-December 1976, all OPEC members except Saudi Arabia and the United Arab Emirates (which includes Abu Dhabi) decided to increase the price of their crude oil by approximately 10% on 1 January 1977...

Dividends

On 9 June 1977 BP announced that it had made application to the Treasury under the Counter-Inflation (Dividends) Order 1973 for permission to increase the 1977 dividends by approximately 50 per cent to 30p net per £1 Stock unit equal to a gross figure (inclusive of associated tax credits at the present rate of ACT) of 46-1538p net per unit...

In the absence of unforeseen circumstances the Directors intend to declare an interim dividend for 1977 of 6-875p net per £1 Stock unit (or, inclusive of associated tax credits at the present rate of ACT, 10-5768p net per unit) for payment on 10 November 1977 and to include any increase in the 1977 dividend allowed under the then current dividend controls with the final dividend for that year payable in May 1978.

The Directors intend to reserve a sum equal to the difference between the 1977 dividends and that which would have been paid had the application to the Treasury been granted. The amount so reserved would be distributed as a special dividend when the removal of dividend restrictions permits.

ACCOUNTANTS' REPORT

The following is a copy of a report from Whimney Murray & Co., Chartered Accountants, 57, Abchurch Lane, London EC4A 3DF, dated 14 June 1977.

The Directors, The British Petroleum Company Limited, The Lords Commissioners of Her Majesty's Treasury, and The Governor and Company of the Bank of England.

Gentlemen, We have acted as auditors of The British Petroleum Company Limited ("BP") since its incorporation on 14 April 1969. We have examined the group accounts of BP and its consolidated subsidiaries ("the BP group") for the five years ended 31 December 1976.

The group income statement and movements in group reserves for the five years ended 31 December 1976, the group balance sheet at that date and statement of source and application of funds for the year then ended, are based on the audited accounts. In our opinion, these statements and the group balance sheet, which have been prepared under the historical cost convention, together with the notes thereon, give a true and fair view of the net income and movements in group reserves for the five years ended 31 December 1976, of the state of affairs at that date and of the source and application of funds for the year then ended.

Our examination of the group accounts did not extend to the unaudited group income statements for the three months ended 31 March 1976 and 1977 respectively and the related note (xii). We report as follows:

1. Accounting Policies

The accounting policies adopted for the preparation of the group accounts of the BP group are set out below. The only significant changes made in the five years ended 31 December 1976 occurred in 1975 and related to deferred taxation and the treatment of depreciation for stock valuation purposes.

Accounting Convention

The accounts are prepared under the historical cost convention.

Composition of Group Accounts

The group accounts comprise a consolidation of the accounts of BP and all its subsidiaries except for a number of minor companies, the consolidation of whose accounts would cause undue expense and delay in presentation and whose income is insignificant. The investment in these minor companies is included in the group balance sheet with investment in associated companies.

Where accounting policies followed by subsidiaries differ significantly from those adopted for group accounts purposes appropriate consolidation adjustments are made for material items.

In the case of associated companies there is included in the income statement the group proportion of the income and costs of those companies, including from 1 January 1976 The Standard Oil Company (Sohio), whose earnings are material. Dividends received are included for associated companies whose earnings are relatively small.

Currency Conversion

Assets and liabilities expressed in currencies other than sterling and operating results of overseas subsidiaries are converted into sterling at the year-end rates of exchange.

Exchange fluctuations are included in the determination of income except those relating to the restatement at year-end exchange rates of

- (a) opening balance sheets of overseas subsidiary and associated companies and
(b) long-term receivables and finance debts (excluding acceptance facilities) in other than local currencies which are taken directly to reserves.

Stock Valuation

Stocks of oil and chemicals are valued at the lower of approximate group cost including overheads, using the first in, first out method, and net realisable value. For purposes of valuation petroleum revenue tax is treated as a cost. Stocks of stores are stated at or below cost calculated mainly using the average method.

Pensions

In most group companies there are pension and retirement plans, the forms and benefits varying with regard to economic conditions and practices in the countries concerned. Payments to funds and provisions are made on the basis of actuarial assessment; current supplementary pension payments are charged against income.

Depreciation and Amounts Provided

Properties and operating assets are depreciated either on a straight-line basis, by the reducing balance method or in accordance with local fiscal rules and in the case of the North Sea Forties Field are being amortised on a unit-of-production basis. The result is that these assets are depreciated over their estimated useful lives or shorter periods.

Exploration properties are written off over the estimated period of exploration and full provision is made against the group's proportion of other exploration expenditure whether incurred directly by subsidiary companies or indirectly by associated companies.

Research

Expenditure on research and development is wholly written off in the year in which it is incurred.

2. Group income statement

Figures, except where otherwise indicated, in £ million

Main financial statement table with columns for Years ended 31 December (1972-1976) and Three months ended 31 March (1976-1977). Rows include Sales proceeds, Deduct: customs duties and sales taxes, Operating and other costs, Income before taxation, etc.

4. Group balance sheet 31 December 1976

Balance sheet table showing Assets employed (Properties and operating assets, Investments, etc.) and Financeed by (Issued capital, Share premium account, etc.).

5. Statement of source and application of funds for the year ended 31 December 1976

Statement of source and application of funds table showing Source of funds (Income before extraordinary items, Depreciation, etc.) and Application of funds (Capital expenditure, Investment in associated companies, etc.).

COMPANY NOTICES

MULTI-TRUST FUND S.A.
Société Anonyme
Headoffice: Luxembourg, 37, rue Notre-Dame
Trade Register: Luxembourg n° B 8478
Notice of Meeting
Notice is hereby given that the Annual General Meeting of the Company will be held at the offices of the Kredietbank S.A., Luxembourg, 43, Boulevard Royal, Luxembourg-ville, on Tuesday, 5 July, 1977 at 3.00 p.m.

DIVIDEND NOTICE

Notice is hereby given that a dividend at the rate of Nineteen Cents (19c) per fully paid share in the Capital Stock of the Bank has been declared for the quarter ending July 31, 1977, payable at the Head Office and Branches of the Bank on and after July 28, 1977, to shareholders of record at the close of business on June 30, 1977.

THE TORONTO-DOMINION BANK

NOTICE TO HOLDERS OF EUROPEAN INTERNATIONAL DEPOSITARY RECEIPTS REPRESENTING SHARES IN THE COMMON STOCK OF THE TORONTO-DOMINION BANK
A cash distribution of 20.50 per Depositary Share will be payable on and after the 25th July, 1977, upon presentation of the Receipts to the Registrar of Companies, Morgan Guaranty Trust Company of Canada, 22, Wall Street, Corporate Trust Department, New York, N.Y. 10038, U.S.A.

PERSONAL
SPITHHEAD ROYAL REVIEW: For Charter of the ship, see page 18 of this issue. Suit party 51. Tel. 01-226 9820.

APPOINTMENTS

TWO REINSURANCE DIRECTORS
1. AFRICA/MIDDLE EAST
2. FAR EAST
Highly successful and expanding Spanish reinsurance company offers appointments for two professional reinsurers.

APPOINTMENTS

Deputy chairman change at James Finlay

Mr. N. S. Caldwell is to become deputy chairman of JAMES FINLAY AND CO. from July 1. Mr. C. H. Campbell retires as deputy chairman and as an executive director from the end of this month but will continue as a non-executive director. Mr. R. D. Combe, managing director of JAMES SEIPSTONE AND SONS, has been appointed to the additional position of chairman. Mr. R. E. A. Pykett has retired as chairman and from the Board. Mr. C. H. W. Troughton has been appointed to the Board of WILLIAM COLLINS AND SONS (HOLDINGS). He retired as chairman of W. H. Smith and Son (Holdings) on January 31. Mr. Norman Hewett has joined SONCLAIR RADIONICS as managing director from GEC where he was chairman of GEC-Henley and managing director of AM Cables. The new executive vice-president of Sinclair Radionics Incorporated in New York is Mr. Robert Gordon. Mr. Colin Hilder, director of E. Erben is resigning from the Erben Board on June 30 to take up a new post as managing director of SEITZ ENGINEERING (GB). Mr. R. V. O'Brien, a director of BRITISH TISSUES, has been appointed chairman in place of Mr. Stephen N. Steen, who has retired from the Board. Mr. Richard Chandler has been appointed to the Board of N. M. ROFESCHILD ASSET MANAGEMENT. Mr. Alex Morrison, chief executive of Thames Water Authority, has been elected president of the INSTITUTE OF COSTS AND MANAGEMENT ACCOUNTANTS for 1977-78. Mr. Geoffrey Rowett and Mr. Frank Hayhurst have become vice-presidents of the Institute. Mr. R. E. Piercy, formerly managing director of Standard Bank Nigeria, has been appointed managing director of HODGE BANK (ISLE OF MAN). Following the sale by SIDLAW INDUSTRIES of its interests in polytape and Synthetic Fabrics (Scotland) to the Low and Bonar Group, Mr. Peter G. Anderson, chairman and managing director of those companies has resigned from the Board of Sidlaw Industries since his responsibilities with those companies would result in a conflict of interest. Mr. R. J. Arnold, Lord Jocelyn, Mr. Nuno De Brito E Cunha and Mr. K. J. Page have joined the Board of ALEXANDER HOWDEN INSURANCE BROKERS. Mr. William Mumre has been elected director and president of the IMPERIAL LIFE ASSURANCE COMPANY OF CANADA. He succeeds Mr. G. Kingsley Fox, who has relinquished his position as president for reasons of health but continues as a director. Mr. A. H. Cave has become president of the BRITISH IMPORTERS CONFEDERATION since 1977. Mr. J. Harrison has been elected chairman. The following have been appointed chairmen of sub-committees: Mr. G. H. Weisberger (general import practices and procedures), Mr. C. J. Tucker (transport), Mr. R. H. Coates (clothing and textiles) and Mr. B. H. Mareson (small tools). Dr. Henry Wynn has been elected president of the ROYAL STATISTICAL SOCIETY for the 1977-78 session from June 22. Mr. William M. Fybus has been elected to the Board of the CORNHILL INSURANCE COMPANY. He is a partner in Herbert Oppenheimer Nathan and Vandyk and holds directorships in a number of industrial companies. Mr. J. Leader has been appointed managing director of RICHARD R. LEADER, replacing Mr. R. Leader who remains chairman. Mr. M. P. Leary, Mr. C. O. Summerhayes and Mr. P. G. Wells have been appointed to the Board of HALAMA. Mr. Leary is managing director of Castlet Locks, Mr. Summerhayes, managing director of Standard Engineering, and Mr. Wells, managing director of Power Equipment, subsidiaries of Halma. Mr. Bill Snowden is to become chairman of FIBREGLASS from September 3 to succeed Mr. Leslie Wall. Mr. Snowden will continue as managing director of that company, which is a member of the Pilkington Group.

PLANT & MACHINERY SALES

Table with columns: Description, Price, Telephone. Includes items like TWO VARIABLE SPEED FOUR HIGH ROLLING MILLS, MODERN USED ROLLING MILLS, 1974 FULLY AUTOMATED COLD SAW, 1970 CUT-TO-LENGTH LINE, 1945 TREBLE DRAFT GRAVITY WIRE DRAWING MACHINE, STRIP FLATTEN AND CUT-TO-LENGTH LINE, 1970 TWO STAND WIRE ROLLING AND STRIP FLATTENING LINE, 2 1/2 DIE M4 WIRE DRAWING MACHINES, 50 H.P. VERTICAL WIREDRAWING MACHINE, 9 ROLL FLATTENING MACHINE, 7 ROLL FLATTENING MACHINE, 1970 TWO STAND WIRE ROLLING AND FLATTENING LINE, 1 1/2 LITTLE USED NEWELL THREE COMPARTMENT COMPOUND TUBE MILL, MODERN USED ROLLING MILLS.

WANTED
MODERN USED ROLLING MILLS, wire rod and tube drawing plant—roll forming machines—slitting—flattening and cut-to-length lines—cold saws—presses—gullionlines, etc. 0902 42541/2/3 Telex 336414

Tanker rates remain very depressed

BY OUR SHIPPING CORRESPONDENT
TANKER RATES remain very depressed and there is little chance of any real improvement until owners lay out a larger number of the vessels brought back during last year's mini-boom. Realising the immense costs involved, owners are unwilling to lay them up again, but the market now leaves them little choice. London shipbrokers E. A. Gibson calculate that at this time last year 450 vessels, totaling some 44m. dwt, were idle. Now, including those laid off from Southern Africa which are all intents and purposes laid up, 283 tankers of about 32m. dwt are idle, which reflects an increase of 5m. tons during the past month. In addition, some 3m. tons of the tankers are semi-laid up or idle in the Gulf where, it is assumed, many of them will remain until rates rise sufficiently to more than offset the 80 per cent. insurance discount which they are eligible for while idle. Mr. Gibson estimates that it will take rates of about Worldscale 25 to persuade the owners of these vessels back into the market. This compares with rates of Worldscale 17-18 for ultra-large crude carriers, Worldscale 20 for very large crude carriers, and Worldscale 23 for 170,000 tonners last week. Smaller ships heading east from the Gulf continue to command premiums for size, with 30,000-tonner to Taiwan obtaining Worldscale 95, and an 80,000 tonner taking a part-cargo of 25,000 tons to the U.S. West Coast Worldscale 82. The Mediterranean market was more active last week with medium-sized tonnage to the U.S. East Coast at about Worldscale 70-72. Evidence was seen of a slight slackening in inquiries in the busy Caribbean market.

Alliance Building Society

announces that from 1st July 1977 the rate of interest paid on Share and Deposit Accounts will be reduced by 0.3% p.a. and the following interest rates will apply to personal investment accounts:-

Table with columns: Net per annum, Gross equivalent yield at 33% income tax rate. Includes rates for ORDINARY SHARES (6-70%), TERM SHARES (6-95%, 7-20%, 7-70%), REGULAR SAVINGS (7-95%), DEPOSIT ACCOUNTS (6-45%), INSURANCE LINKED INVESTMENT (6-70%).

The rate of interest on all other Share and Deposit Accounts, including all previous issues of Term Shares, will be reduced by 0.3% p.a. and on investments by Limited Companies and other bodies by 0.5% p.a. from 1st July 1977. S.A.Y.E. Accounts are not altered by these reductions.



Head Office: Alliance House, Hove Park, Hove, East Sussex BN3 7AZ.

MILBURY LIMITED
Results for year to 31st March 1977
Turnover £4,447,207 an increase of 8.59%
Profit before taxation £484,602 an increase of 13.62%
Land bank replenished during the year
Milbury Limited is a member of the Saint Piran Group

Brown Shipley

Extracts from the annual statement by Lord Farham, Chairman of Brown Shipley Holdings, for the year ended 31st March 1977.

The past year was dominated for both Banking and Insurance by dramatic changes in the value of the pound and in the general level of interest rates. Both Groups report increased profits during a period when our business in the United Kingdom has been held back by the continued low level of economic activity.

Results for the Year

The Group profit after tax and a transfer to income banking reserves was £1,482,000 compared to £1,240,000 in 1976. Total dividends paid and recommended are 12.76p per share gross, the maximum permitted.

Banking Group

Despite subdued demand for credit, with little sign of change as yet, utilisation of acceptance facilities has been maintained, assets held for leasing increased and there has been some increase in the level of advances. Commercial banking activity has remained high and with the recovery of the pound and the sharp decline in interest rates the Bank earned good profits in the money and securities markets. To ensure continued expansion the Bank's share capital has been increased by a further £1 million.

Oceanic Unit Trusts

The Bank is increasing its involvement in investment management and in February took over the Oceanic group of unit trusts.

Channel Islands

Wholly owned banking operations have been set up since March in Jersey and Guernsey to provide valuable improvements in our services.

Trinity Bank

Since March, the Bank has increased its holding in Trinity Bank, in Dublin, by a further 310,000 £1 shares and now holds 60 per cent of its £1,012,500 share capital. Philadelphia National Bank will retain its 22.2 per cent holding. Together we can assist Trinity to offer a wider range of services and to give it strong support for its future development.

Insurance Group

Pre tax profit of this Group increased from £786,000 to £890,000. Genuine growth in business overseas, particularly in North America, was reinforced by favourable exchange rates. Interest earnings were well maintained. The higher level of rent in our new premises has been absorbed but growth in the home market is still held back by low economic activity. We will look for expansion where we are most confident in the economic outlook and can apply our particular skills.

No. 4 Moorgate

Work on this fine building is nearly complete. The sale of our interest was announced in April and we expect to receive £3.6 million next month. The £1 million of new capital for the Bank was paid up in March so the only immediate application of the after-tax proceeds of at least £3.3 million is to repay the Company's bank facilities of £2.5 million. The balance will add to the Group's liquid resources and further contribute to profitability.

The Future

Interest rates and the pound seem unlikely to move significantly for the time being and we may hope these more stable conditions will encourage economic activity in this country. When demand from industry for finance revives it will have an immediate impact, but with increased share capital our Banking Group will be able to take advantage of the opportunities recovery will bring.

1977 results

Table with columns: Year ended 31st March, 1977, 1976. Includes Total Gross Assets (£000's), Shareholders Funds (£000's), Net profit after tax (£000's), Earnings per share, Rate of Dividend.

Brown Shipley Holdings Limited
Founders Court, Lothbury, London EC2R 7EB

APPLICATION FORM

THE APPLICATION LISTS FOR THE ORDINARY £1 STOCK UNITS NOW OFFERED FOR SALE WILL OPEN AT 10 a.m. ON FRIDAY, 24 JUNE 1977, AND WILL CLOSE AT ANY TIME THEREAFTER ON THE SAME DATE.

Applications must be for 25 units or for 50 units and thereafter must be for the following multiples of units: Applications for over 500 units and not more than 500 units; Applications for over 900 units and not more than 2,000 units; Applications for over 2,000 units and not more than 10,000 units; Applications for over 10,000 units and not more than 50,000 units; Applications for over 50,000 units.

THE BRITISH PETROLEUM COMPANY LIMITED
(Incorporated in England under the Companies (Consolidation) Act 1908.)
OFFER FOR SALE OF 66,785,691 Ordinary £1 Stock units at £8.45 per unit payable as follows:
On Application £3.00 per unit On or before 6 December 1977 £5.45 per unit.

THE LORDS COMMISSIONERS OF HER MAJESTY'S TREASURY

Form with fields for Name, Address, and other details. Includes instructions for applicants.

Form with fields for Name, Address, and other details. Includes instructions for applicants.

OVERSEAS MARKETS

EUROBONDS

Sharp take-off in U.S. dollar sector

BY FRANCIS GHIL

THE SECOND DAY of last week witnessed a sharp take-off in the U.S. dollar sector of the market, following Monday's surprise cut in Morgan Guaranty's prime rate and a fall in Eurodollar rates.

Prices of straight bonds moved up across the board with gains of half a point to a point being recorded. The turnover was the best in weeks, according to dealers.

This mood helped the Swedish issue which was priced more generously than had been expected. By the end of the week the short-term tranche was trading at 98-99 1/2 while the longer term one was trading at 98 1/2-99 1/2, both below their respective issue prices, but especially in case of the pre-year paper, not by much.

By Wednesday a certain amount of profit taking had developed and the market was eased. This came as no surprise - dealers said that the increase had been somewhat overdone on Tuesday.

The trend apparent for some weeks now of investors moving into higher coupon commitments. Fears of a rise in interest rates persists although nobody is quite sure they have bottomed out yet.

Every time the rates edge up, many in the market take it as a danger sign and yet they often fall off again. Some bankers argue, in any case, that

a slightly longer term view would be taken. An interesting feature of the week was the success of the first Unit of Account issue in nine months. Imatran Voima has raised U25m through a consortium led by Krefbank. The initial amount was increased and the bond priced at a premium, a success story which will be added to Finland's triple-A ratings as a counterweight to investors' political fears.

Issues priced Among issues priced at par were Australian Mining and Smelting, which was increased from \$30m to \$40m, the Mitsubishi Gas convertible and Credit Lyonnais' floating rate Asian dollar bond issue.

Disappointment of the week was the Brazilian Banco Nacional de Desenvolvimento issue which was priced at 99 and traded as much as two points lower.

Clit Brocade, a Dutch pharmaceutical company specialising in fermentation technology, which is producer of penicillin (net sales were worth F192.5m last year, total assets F175.5m and net income F15.5m) is raising a \$20m bond.

The Canadian dollar sector was more stable last week with buyers further in evidence towards the middle of the week. Laurentide was priced at par while Walter Heller International announced it was raising C\$25m through a group of banks led by Orion.

The DM sector picked up a little last week and the firmer undertone of trading was notable despite very moderate activity, especially after mid-week as dealers were taking off before the Friday holiday.

The Industrial and Mining Development Bank of Iran was priced at 99 but the Spanish Amstar was priced at par and Norway Gas at 101. The first time in about a month that a D-mark issue has not been priced at a discount. Furthermore, the Norsee issue points to the willingness of even top quality borrowers to pay a higher coupon.

Meanwhile Dresdner Bank has a DM100m issue for Compagnie Francaise des Petroles. Maturity is 7 years and the indicated coupon is 6 1/2 per cent.

In the Dutch guildler market Mexico's F175m met with a cool reception partly because of the fact that the Pemex U.S. dollar bond currently in the market offers a considerably higher rate, but perhaps even more because the market has seen a recent deal of Mexican paper recently.

The first Yen-denominated bond to be issued through a private placement since 1973 was announced, a ten year Y10bn for the Philippines.

The rally in the market has now been going on for two weeks but some of the factors which helped last week may have played themselves out in particular professionals running to cover on short positions.

Interest rates have come down again but this does not make the outlook any clearer, as more than one dealer will admit. Stability should be helped by the very few number of new issues which at present are in the pipeline. The number of new issues scheduled is about one third of what it was a week ago.

Realigning The BIS are not alone in thinking that, apart possibly from a realignment within the snake involving the Scandinavian currencies, both interest and foreign exchange rates will remain stable on the Western Front.

Spain continues to borrow: the latest loan in the market is \$100m for six years carrying a 1 1/2 per cent spread over Libor for the Institute de Credite Oficial, a State organisation which receives money from the Spanish Treasury and lends it on to State banks on a medium term basis.

Joint lead managers are Cie Financiera de la Deutsche Bank, European Banking Co., which is also running the books, Banco Arabe Espanol and Midland Bank. Co managers include Amsterdam Rotterdam Bank, Amex, Citicorp, Creditanstalt Bankverein and the European Banking Corporation.

In view of the result of the elections, the loan should not be difficult to syndicate. Following close on the heels of the \$200m for Institute Mobiliare Italiano comes a \$200m loan guaranteed by the Italian State electricity company, STET. Maturity is five years and the spread 1 1/2 per cent over Libor, somewhat higher than the 1 1/4 per cent achieved by IRI Hill.

Reuters reports from Tokyo that Indonesia is seeking \$50m in the form of a medium term loan from a group of banks led by Bank of Tokyo. Indicated spread over Libor is 1 1/2 and the proceeds will be used to help finance the \$1.5bn. liquefied natural gas projects in North Sumatra.

UNIT OF ACCOUNT Imatran Voima U/A25 1987 9 101 Kredittbank

INDUSTRIAL FLORINS Mexico F175 1982 Bullet 8 99 Algemeine

PHILIPPINES 106bn 1987 n.a. 8 99 Nomura

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

AMSTERDAM June 17 Price +/- or Div. Yld. %

Indices

NEW YORK - DOW JONES

Table with columns for Date, High, Low, and various index values for Dow Jones.

STANDARD AND POORS

Table with columns for Date, High, Low, and various index values for Standard and Poors.

Y. S. E. ALL COMMON

Table with columns for Date, High, Low, and various index values for Y. S. E. All Common.

MONTEREAL

Table with columns for Date, High, Low, and various index values for Montreal.

TORONTO COMPOSITE

Table with columns for Date, High, Low, and various index values for Toronto Composite.

JOHANNESBURG

Table with columns for Date, High, Low, and various index values for Johannesburg.

GERMANY

Table with columns for Date, High, Low, and various index values for Germany.

AMSTERDAM

Table with columns for Date, High, Low, and various index values for Amsterdam.

AMSTERDAM

Table with columns for Date, High, Low, and various index values for Amsterdam.

AMSTERDAM

Table with columns for Date, High, Low, and various index values for Amsterdam.

AMSTERDAM

Table with columns for Date, High, Low, and various index values for Amsterdam.

AMSTERDAM

Table with columns for Date, High, Low, and various index values for Amsterdam.

AMSTERDAM

Table with columns for Date, High, Low, and various index values for Amsterdam.

AMSTERDAM

Table with columns for Date, High, Low, and various index values for Amsterdam.

AMSTERDAM

Table with columns for Date, High, Low, and various index values for Amsterdam.

AMSTERDAM

Table with columns for Date, High, Low, and various index values for Amsterdam.

AMSTERDAM

Table with columns for Date, High, Low, and various index values for Amsterdam.

OVERSEAS SHARE INFORMATION

NEW YORK

Table with columns for Date, High, Low, and various share prices for New York.

AUTHORISED UNIT TRUSTS

OFFSHORE AND OVERSEAS FUNDS

Table of financial data for various unit trusts, including columns for fund names, dates, and values.

Table of financial data for various unit trusts, including columns for fund names, dates, and values.

Table of financial data for various unit trusts, including columns for fund names, dates, and values.

Table of financial data for various unit trusts, including columns for fund names, dates, and values.

FINANCIAL TIMES STOCK INDICES

Table showing stock indices for various markets, including columns for index names and values.

FT - ACTUARIES INDICES

Table showing actuarial indices for various categories, including columns for index names and values.

HONG KONG SINGAPORE

Table showing financial data for Hong Kong and Singapore, including columns for market names and values.

INSURANCE, PROPERTY, BONDS

Table of financial data for insurance, property, and bond funds, including columns for fund names and values.

INSURANCE, PROPERTY, BONDS

Table of financial data for insurance, property, and bond funds, including columns for fund names and values.

INSURANCE, PROPERTY, BONDS

Table of financial data for insurance, property, and bond funds, including columns for fund names and values.

CLIVE INVESTMENTS LIMITED advertisement with contact information and investment details.

CORAL INDEX: Close 440-445

INSURANCE BASE RATES advertisement with property growth and other rates.

INDUSTRIALS

FT SHARE INFORMATION SERVICE

Henry Boot Great people to build with Henry Boot Construction Limited, Dronfield, Sheffield S18 6XR

Handwritten text in a box at the top left.

CANADIANS

BUILDING INDUSTRY - Continued

DRAPERY AND STORES - Continued

ENGINEERING - Continued

BRITISH FUNDS

Table of British Funds with columns for Stock, Price, and Yield.

Table of Canadian stocks with columns for Stock, Price, and Yield.

Table of Drapery and Stores stocks with columns for Stock, Price, and Yield.

Table of Engineering stocks with columns for Stock, Price, and Yield.

BANKS AND HIRE PURCHASE

Table of Banks and Hire Purchase stocks with columns for Stock, Price, and Yield.

ELECTRICAL AND RADIO

Table of Electrical and Radio stocks with columns for Stock, Price, and Yield.

FOOD, GROCERIES, ETC.

Table of Food, Groceries, etc. stocks with columns for Stock, Price, and Yield.

INTERNATIONAL BANK

Table of International Bank stocks with columns for Stock, Price, and Yield.

CHEMICALS, PLASTICS

Table of Chemicals, Plastics stocks with columns for Stock, Price, and Yield.

ENGINEERING MACHINE TOOLS

Table of Engineering Machine Tools stocks with columns for Stock, Price, and Yield.

AMERICANS

Table of American stocks with columns for Stock, Price, and Yield.

COMMONWEALTH & AFRICAN LOANS

Table of Commonwealth & African Loans with columns for Stock, Price, and Yield.

BEERS, WINES AND SPIRITS

Table of Beers, Wines and Spirits stocks with columns for Stock, Price, and Yield.

CINEMAS, THEATRES AND TV

Table of Cinemas, Theatres and TV stocks with columns for Stock, Price, and Yield.

HOTELS AND CATERERS

Table of Hotels and Caterers stocks with columns for Stock, Price, and Yield.

FOREIGN BONDS & RAILS

Table of Foreign Bonds & Rails with columns for Stock, Price, and Yield.

DRAPERY AND STORES

Table of Drapery and Stores stocks with columns for Stock, Price, and Yield.

BUILDING INDUSTRY, TIMBER AND ROADS

Table of Building Industry, Timber and Roads stocks with columns for Stock, Price, and Yield.

AMERICANS

Table of American stocks with columns for Stock, Price, and Yield.

AMERICANS

Table of American stocks with columns for Stock, Price, and Yield.

BUILDING INDUSTRY, TIMBER AND ROADS

Table of Building Industry, Timber and Roads stocks with columns for Stock, Price, and Yield.

DRAPERY AND STORES

Table of Drapery and Stores stocks with columns for Stock, Price, and Yield.

ENGINEERING - Continued

Table of Engineering stocks with columns for Stock, Price, and Yield.

Large table on the right side of the page containing various stock listings and financial data.

INDUSTRIALS—Continued

Table of industrial stocks including companies like British Petroleum, Shell, and ICI, with columns for stock name, price, and other financial metrics.

MOTORS, AIRCRAFT TRADES

Table listing various motor and aircraft-related companies such as British Leyland, Ford, and various aircraft manufacturers.

PROPERTY—Continued

Table of property-related companies and investments, including various real estate and development firms.

TRUSTS—Continued

Table listing various trusts and investment funds, including their names and performance metrics.

TRUSTS—Continued

Continuation of the trusts table, listing more investment funds and their details.

Advertisement for SANWA BANK, Tokyo, Japan, featuring the slogan 'Serving the world with financial expertise.' and the bank's name in large letters.

Table titled 'MINES—Continued' listing various mining companies and their stock prices.

Table titled 'AUSTRALIAN' listing Australian-based companies and their financial data.

Table titled 'TINS' listing tin-related companies and their stock prices.

Table titled 'COPPER' listing copper-related companies and their financial information.

Table titled 'MISCELLANEOUS' listing various other companies and their stock prices.

NOTES section containing various financial notes, announcements, and market commentary.

Table titled 'RUBBERS AND SISALS' listing companies in the rubber and sisal industries.

Table titled 'TEAS' listing tea-related companies and their stock prices.

Table titled 'CENTRAL RAND' listing companies in the Central Rand region.

Table titled 'EASTERN RAND' listing companies in the Eastern Rand region.

Table titled 'FAR WEST RAND' listing companies in the Far West Rand region.

Table titled 'REGIONAL MARKETS' listing various regional market indices and prices.

Table titled 'DIAMOND AND PLATINUM' listing diamond and platinum-related companies.

Table titled 'OPTIONS 3-month Call rates' listing options and call rates for various assets.

INSURANCE

Table listing various insurance companies and their financial data.

PROPERTY

Table listing property-related companies and their stock prices.

TRUSTS, FINANCE, LAND

Table listing trusts, finance, and land-related companies.

FINANCE, LAND, etc.

Table listing finance, land, and other related companies.

FINANCE

Table listing various financial institutions and their stock prices.

Text block providing additional market information and commentary.

Text block providing additional market information and commentary.

Text block providing additional market information and commentary.

Text block providing additional market information and commentary.

Text block providing additional market information and commentary.

Text block providing additional market information and commentary.

Text block providing additional market information and commentary.

Text block providing additional market information and commentary.

Text block providing additional market information and commentary.

Text block providing additional market information and commentary.

Text block providing additional market information and commentary.

Text block providing additional market information and commentary.

Text block providing additional market information and commentary.

Text block providing additional market information and commentary.

